DELTA LAND SERVICES

December 31, 2012

Department of the Army
Corps of Engineers, New Orleans District
P.O. Box 60267
New Orleans, Louisiana 70160-0267
Regulatory Branch
Attn: Mr. Brian Breaux

RE MVN-2011-03213-MB: Revision 1 of the Ponderosa Ranch of Pointe Coupee Mitigation Bank Draft Mitigation Banking Instrument

Mr. Breaux,

Please find enclosed hardcopies of the revised Draft Mitigation Banking Instrument (MBI) for the above-referenced project. This is a revision of the Draft MBI submitted to you on November 20, 2012. The revision was based upon comments received pertaining to the integrated planting method proposed for the 2000.9-acre Type 2 and 3 Bottomland Hardwood (BLH) Restoration areas. The following describes the changes that have been made.

- The integrated planting method described for the Type 2 and 3 BLH Restoration Area was removed from Section VI of the Mitigation Work Plan (MWP). The 50% composition of eastern cottonwood (*Populus deltoids* W. Bartram ex Marshall) within the Type 2 and 3 BLH Restoration Areas was replaced with ≤10% cottonwood within the softmast species (see Table 5 of the MWP). The planting rate within this restoration area was changed from 602 seedlings per acre (spa) to 538 spa.
- The Sponsor is proposing the integrated planting method be utilized as previously described but only within the 1.7 acres of nonwetland afforestation (see Section VI of the MWP and Table 6).
- The Maintenance Plan (Section VII of the MWP) was modified to remove the requirement for the Sponsor to deaden the eastern cottonwood stems from Years 11 to 15 as this no longer applies to the restoration acreage.
- Data collection for hydrology described Section X.A.3 of the MWP was defined in terms of qualitative such as field indicators and quantitative through instrumentation such as piezometers, monitoring wells or other methods.

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- On November 30, 2012, a perpetual conservation servitude was executed on 27.6 acres of pasture adjacent to the Bank site in association with a Permittee-Responsible Mitigation (PRM) Project. With the existing 248.5-acre servitude executed earlier in 2012, this brings the total acreage of conservation servitude adjacent to the Bank to 276.1 acres. Changes were made to Sections II and III of the MWP and in Attachment MWP-A Figure 6 (*Surrounding Land Use within One Mile Radius*) to reflect this.
- The financial assurances were changed in Section IX.A of the Mitigation Banking Instrument (MBI); Section XI.B of the MWP; and Attachment MWP-D. The amount allocated to construction was underestimated in the original draft due to a spreadsheet formulation error and has been corrected in this revision. The establishment fund was reduced due to the elimination of costs associated with deadening of the eastern cottonwood in Years 11 to 15.

If you have any questions or need additional information please contact me at 225-388-5146 or daniel@deltaland-services.com.

Regards,

Daniel Bollich, Ecological Program Director
Delta Land Services, LLC

Enclosures

DRAFT

Revision 1 dated December 31, 2012

BANKING INSTRUMENT

PONDEROSA RANCH OF POINTE COUPEE MITIGATION BANK

Bottomland Hardwood and Baldcypress Swamp Re-establishment, Rehabilitation and Enhancement Project

Pointe Coupee Parish, Louisiana

Sponsored By:

Delta Land Services LLC

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MITIGATION BANKING INSTRUMENT

PONDEROSA RANCH OF POINTE COUPEE MITIGATION BANK

This Mitigation Banking Instrument (MBI) establishing the Pointe Coupee Ranch of Pointe Coupee Mitigation Bank (Bank) is made and entered into by and among Delta Land Services LLC (Sponsor), the heirs of the Succession of John E. Jumonville, Sr. and Claude Coulon Jumonville (Owner) and the Interagency Review Team (IRT) composed of the U.S. Army Corps of Engineers New Orleans District (CEMVN), Region VI of the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (FWS), and the Louisiana Department of Wildlife and Fisheries (LDWF). This MBI is a binding agreement among the parties and incorporates the detailed Mitigation Work Plan and any other attachments to the MBI as a part hereof.

I. Purpose of MBI

This MBI sets forth guidelines and responsibilities for the establishment, use, operation, protection, monitoring and maintenance of the Bank to assure the proposed work associated with the Bank produces the necessary mitigation credits to compensate for unavoidable impacts to waters of the United States, including wetlands, that result from activities authorized under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act, provided such activities have met all applicable requirements and are authorized by the appropriate regulatory agencies pursuant to 33 CFR 332.1 et seq. The Bank may also be used to satisfy the environmental requirements of other programs in accordance with the requirements and limitations of 33 CFR 332.3 and Section XI in this MBI.

II. Location and Ownership of Bank Property (Property)

A. Property Location

The Property is located at latitude 30.644274° N and longitude 91.402546° W (approximate center point) in Pointe Coupee Parish, Louisiana (Attachment A). This location includes all or portions of Section 101, Township 5 South, Range 10 East and Sections 18 and 97, Township 5 South, Range 11 East. The Property is located approximately three miles south-southeast from New Roads, Louisiana. To reach the Property from the intersection of US Highway 190 and LA Highway 413 (Bayou Poydras Road) in Erwinville, Louisiana, proceed north on LA Highway 413 for 4.8 miles. Turn left onto Highway 416 and travel 0.2 miles. Turn right on Highway 413 and proceed north for 0.5 miles. Turn left on Highway 414 and travel approximately 1.6 miles to Oilfield Road and take a right onto Oil Field Road (private road). At this point there is a locked gate so arrangements must be made with DLS or the Owner prior to further access. From the gate travel approximately 1.4 miles and take a right on the unimproved road for approximately 2.31 miles. The PRPCMB is on the right (east side of the unimproved road).

B. Property Ownership

The property owner is in the proportions of an undivided three-fourths ($3/4^{th}$) interest by the heirs of the Succession of John E. Jumonville (also known as John E. Jumonville, Sr. or J. E. Jumonville, Sr.), and an undivided one-fourth ($1/4^{th}$) interest to Claude Coulon Jumonville. Mr. Claude Coulon Jumonville is the independent administrator of the Succession of John E. Jumonville and has authority to act on the estate's behalf. Mr. Claude Coulon Jumonville is referenced as the Owner throughout this MBI. The Property has been under the ownership of the John E. Jumonville and his heirs since 1947. The property sits within a larger 2,131-acre tract of the same ownership.

C. Property Legal Definition

A certain parcel of land, together with all buildings and improvements thereon, and all of the rights, ways, privileges, servitudes, prescriptions, advantages and appurtenances thereunto belonging, or in anywise appertaining, situated as stated above and more fully described as a tract or parcel of land located in section 97 Township 5 South, Range 11 East and Section 101 Township 5 South, Range 10 East in Pointe Coupee Parish, Louisiana. For a point of reference begin at a cross-tie marking the apparent corner common to section 55 township 5 south, range 10 east and section 18, 97 and 98, township 5 south, range 11 east; thence north 33 degrees 34 minutes 17 seconds east a distance of 105.03 feet to a calculated point; thence run north 16 degrees 48 minutes 23 seconds east a distance of 3007.60 feet to a calculated point and the point of beginning (Northing of 777660.449 and Easting of 3261139.379 using State Plane, NAD83, LA South, US Survey Feet). From the point of beginning run north 78 degrees 17 minutes 13 seconds west a distance of 1805.64 feet to a calculated point; thence north 59 degrees 31 minutes 24 seconds west a distance of 1575.41 feet to a calculated point; thence south 45 degrees 14 minutes 25 seconds west a distance of 417.66 feet to a calculated point; thence north 48 degrees 38 minutes 17 seconds west a distance of 2371.70 feet to a calculated point; thence north 56 degrees 28 minutes 53 seconds east a distance of 81.32 feet to a calculated point; thence north 09 degrees 23 minutes 01 second east a distance of 71.42 feet to a calculated point; thence north 58 degrees 12 minutes 41 seconds east a distance of 3780.42 feet to a calculated point; thence south 43 degrees 38 minutes 32 seconds east a distance of 821.75 feet to a calculated point; thence south 23 degrees 43 minutes 42 seconds east a distance of 135.91 feet to a calculated point; thence south 43 degrees 47 minutes 06 seconds east to a distance of 377.14 feet to a calculated point; thence south 23 degrees 47 minutes 11 seconds east a distance of 102.80 feet to a calculated point; thence south 70 degrees 33 minutes 17 seconds east a distance of 86.15 feet to a calculated point; thence south 43 degrees 42 minutes 49 seconds east a distance of 1268.81 feet to a calculated point; thence south 0 degree 29 minutes 19 seconds west a distance of 840.31 feet to a calculated point; thence south 68 degrees 41 minutes 38 seconds east a distance of 535.33 feet to a calculated point; thence south 16 degrees 48 minutes 24 seconds west a distance of 1605.53 feet to the point of beginning, consisting of 323.76 acres.

The perimeter of the Property is defined by the following coordinates in decimal degrees:

Latitude	Longitude
30.63020156	-91.398527
30.63044207	-91.398712
30.63835922	-91.395952
30.63936427	-91.401574
30.64155881	-91.405893
30.64074973	-91.406836
30.64505542	-91.412499
30.64517902	-91.412284
30.64537276	-91.412247
30.65085372	-91.402033
30.6492197	-91.400228
30.64887771	-91.400054
30.64812954	-91.399224
30.64787098	-91.399092
30.64794996	-91.398833
30.64542985	-91.396044
30.64311961	-91.396065
30.64258556	-91.394479

D. Recorded Liens, Encumbrances, Easements, Servitudes or Restrictions

Clear title to the Property has been documented by a title report /opinion (Attachment B) generated by the Law Offices of Jewell & Jewell and will be updated two weeks prior to execution of the conservation servitude. Any exceptions to the real estate title not subordinated to the conservation servitude are listed below:

The Bank is free of any mortgages, liens and encumbrances except for three mortgages held in favor of Peoples Bank and Trust Company of Pointe Coupee. However, Peoples Bank and Trust Company will subordinate all three of the mortgages in favor of the conservation servitude described in Section X.A of this MBI. There are no zoning or existing ordinances in place which affect the Bank.

The title report did not offer an opinion regarding the existence of any mineral leases or mineral ownership. However, the Owner has attested that 1) there are no outstanding mineral leases currently affecting the Property; 2) there is no oil, gas or any other mineral currently produced from the Property, and 3) he is the owner of all mineral rights, specifically including all executive rights, associated with the Property. The Sponsor conducted a review of the Louisiana Department of Natural Resources (LDNR) Strategic Online Natural Resources Information System (SONRIS) database for oil and gas activity revealed the location of two wells within or in close proximity to the Bank but these wells were plugged and abandoned.

III. RESPONSIBILITIES OF PARTIES

A. The Owner

1. The Owner will furnish satisfactory evidence of clear title prior to the execution of this MBI unless such evidence of clear title was previously provided by a former owner of the site pursuant to this MBI.

2. The Owner will grant a perpetual conservation servitude over the Property in accordance with Louisiana law and La. R.S. 9:1272, and 33 C.F.R. § 332.8(t). Upon execution of the conservation servitude, the Owner will record it with an attached copy of this MBI in the conveyance records of Pointe Coupee Parish, unless such conservation servitude was previously executed and properly recorded by a former owner pursuant to this MBI. Proof of such recordation will be provided to the IRT within 15 days of filing

3. The Owner will not allow any prohibited uses of the Property as set forth in this MBI and the conservation servitude.

4. To avoid the risk of possession by a financial institution, the Owner will not identify the Property as collateral for any business transaction.

5. The Owner will allow the Sponsor access to the Property. Any limitations on such access are to be a matter of contract between the Owner and the Sponsor. The Owner will also allow access to the Property to IRT members and the Holder in accordance with this MBI.

6. The Owner will make periodic inspections of the Property of not less than once per year to verify that use of the Property is consistent with this MBI and the conservation servitude and to inspect for any damage caused by flood, fire, storm, wind, accident, vandalism, negligence or other act or event that causes damage to the Bank.

7. In the event the Owner discovers a prohibited use or any damage to the Property, it shall notify the IRT and Sponsor within 15 days of its discovery of such use or damage.

8. The Owner shall notify the Sponsor and the IRT of any proposed transfer of the Property in accordance with the provisions of this MBI.

B. The Sponsor

1. Through contractual agreement with individual permit recipients, the Sponsor will, for a fee to be paid by permittees, provide compensation for wetland impacts as required in DA permits and commit to enhance and restore wetland functions and maintain wetland habitats in accordance with the provisions of this MBI.

2. The Sponsor will assume the legal responsibility for compensatory mitigation requirements of DA permits for which it transfers credits once a permittee has secured the

appropriate number and type of Credits from the Sponsor. The Sponsor will provide to CEMVN the documentation that confirms that the Sponsor has accepted the responsibility for providing the required compensatory mitigation. If the Sponsor fails to provide the required compensatory mitigation, CEMVN may pursue enforcement measures against the Sponsor to ensure compliance with the mitigation requirements of DA permits.

3. The Sponsor will perform all necessary work to establish, monitor and maintain aquatic habitats and buffers as described in the Mitigation Work Plan until the Sponsor has demonstrated to the satisfaction of the agencies represented on the IRT (acting through the Chair) that the Bank complies with all provisions contained herein, or until all credits are sold, whichever is later.

4. The Sponsor will be responsible for maintaining accounting records, notifying the IRT of credit sales, monitoring the Bank for success, conducting remedial action as necessary to insure success, and providing this information to CEMVN in reports documenting Bank usage and the results of monitoring in accordance with the provisions of this MBI.

5. The Sponsor will be responsible for advising the IRT of any pending sale of the Property or change in sponsorship at least 60 days prior to the effective date.

6. The Sponsor will obtain all appropriate environmental documentation, permits and other authorizations needed to establish and maintain the Bank, prior to debiting or advancing of credits. Compliance with this MBI does not fulfill the requirement, or substitute, for such authorization.

7. Unless any of the responsibilities identified above are transferred, with prior approval of CEMVN, to a long-term steward or new ownership, the Sponsor remains responsible for : 1) the compensatory mitigation requirements for any DA permits for which it sold Bank credits; and 2) the long-term management, maintenance, monitoring and protection of the compensatory mitigation represented by those credits.

C. The IRT

Signing of this MBI does not constitute a binding agreement of action on the part of any resource agency beyond its customary regulatory purview. Subject to the availability of staff and funds, the agencies represented on the IRT agree to:

1. Provide appropriate oversight in carrying out provisions of this MBI.

2. Provide comments on all project plans, proposed additions of land to the Bank, annual monitoring reports, credit review reports, contingency plans, and necessary permits for the Bank.

3. Review and confirm reports on evaluation of success criteria prior to approving credits or releasing escrow account funds.

4. Conduct compliance inspections as needed and recommend corrective measures (if any) to the Sponsor, until the terms and conditions of the MBI have been determined to be fully satisfied or until all credits have been sold, whichever is later.

5. Review, comment and approve/disallow any modifications to this MBI.

D. The Holder of Conservation Servitude (Holder)

1. The Holder shall hold and enforce the conservation servitude placed on those lands within the Bank subject to a recorded perpetual conservation servitude so that Bank lands are protected in perpetuity.

2. The Holder will notify CEMVN within 24 hours of the discovery of any action taken to void or modify the conservation servitude.

3. The Holder shall perform yearly inspections and provide annual reports as to compliance with restricted and approved uses of the Property identified in the conservation servitude.

4. The Holder may be the recipient of the financial assurance should the Sponsor be in default of this MBI and shall utilize such funds as directed by the IRT,

5. The Holder may serve as the Long-Term Steward should the Sponsor make arrangements for the Holder to act in this capacity.

E. Long-Term Steward (Steward)

If a long-term Steward is appointed, the Steward will assume the responsibilities of the Sponsor and will perform the long-term maintenance, management, monitoring and reporting responsibilities in accordance with this MBI.

IV. GOALS AND OBJECTIVES

The Bank will provide 241.7 acres of bottomland hardwood re-establishment, 6.6 acres of bottomland hardwood rehabilitation, 38.8 acres of baldcypress swamp re-establishment, 13.8 acres of baldcypress swamp rehabilitation and 2.1 acres of baldcypress swamp enhancement to compensate for unavoidable wetland impacts for the Terrebonne Basin area. Goals, objectives and contributions to overall watershed/regional functions provided by the Bank are described in the Mitigation Work Plan (Attachment C).

V. PERFORMANCE STANDARDS

In order for the Bank to be considered acceptable for mitigating wetland impacts associated with DA permits, the Property will be restored in accordance with the Mitigation Work Plan such that it meets wetland criteria as described in the 1987 Corps of Engineers Wetlands Delineation Manual and the 2010 Atlantic and Gulf Coastal Regional Supplement (the 1987 Manual and

AGCP Regional Supplement). Performance standards used to measure the success of the Bank are provided in the Mitigation Work Plan.

VI. MONITORING PLAN AND REPORTING PROTOCOLS

A. Monitoring

The Sponsor agrees to perform all work necessary to monitor the Bank to demonstrate compliance with the success criteria established in this MBI. Monitoring guidelines are established in the Mitigation Work Plan.

B. Reporting Protocols

The Sponsor agrees to provide all monitoring reports as described in the Mitigation Work Plan (Attachment C).

VII. CONTINGENCIES AND REMEDIAL ACTIONS

A. Adaptive Management

In the event the IRT determines adaptive management is needed, the Sponsor is responsible for implementing an approved Adaptive Management Plan in accordance with 33 CFR 332.4(c)(12) and 33 CFR 332.7(c). The Adaptive Management Plan, Section XII in the Mitigation Work Plan, identifies specific measures to be taken and a timetable to complete the work to correct most potential deficiencies.

B. Notice of Deficiency

1. If monitoring discloses that the Bank does not meet success criteria, the Sponsor will provide a Notice of Deficiency to CEMVN that success criteria have not been met. This notice shall be submitted with the monitoring report. Along with the notice the Sponsor will provide a detailed explanation of the deficiency and a proposal identifying specific measures to be taken and a timetable to complete the work to correct the deficiency. CEMVN, in consultation with the IRT, shall determine a course of action required to correct deficiencies and then notify the Sponsor to engage in corrective actions pursuant to the Adaptive Management Plan or other action as the situation may warrant.

2. When a disaster (natural or man-induced) adversely affects the Bank, the Sponsor shall provide a Notice of Deficiency to CEMVN of such circumstance within two weeks of the event. The notice will identify the disaster and impacts to the Bank, specify measures to be taken to correct the impacts and a timetable to complete the work necessary to restore the Bank. CEMVN shall then notify the Sponsor to engage in corrective actions pursuant to the Adaptive Management Plan or other action as the situation may warrant.

C. Conditions for Suspending Credit Sales

1. Should the IRT determine that the Bank is not performing according to the standards and criteria set forth in this MBI, credit sales will be suspended. Sale of credits will not resume until remedial actions have been taken and the deficiencies are corrected.

2. If the Sponsor fails to implement adaptive management to address any failure in meeting the performance standards within one growing season (November 1 of the following year) after notification, the IRT, acting through the CEMVN, will notify the Sponsor of the revocation of any remaining mitigation credits. If the IRT determines that the Bank is operating at a deficit at this time, the Sponsor will replace the credit deficit at another mitigation bank. The perpetual conservation servitude will remain in place on the Property to protect accrued credits.

D. Natural Disasters[1]

In the event substantial damage to the Bank caused by a natural or human-caused disaster or a deliberate and unlawful act, the CEMVN, in consultation with the Sponsor and the IRT, determines that the disaster was beyond the control of the Sponsor, its agents, contractors, or consultants to prevent or mitigate; the Sponsor may request, and the CEMVN, in consultation with the IRT, may approve changes to the construction, operation, project milestones, performance standards or crediting formula of the Bank.

In addition, should a disaster with substantial damage to the Bank occur:

1. Use of the Bank will be temporarily suspended pending determination of the degree of impacts and measures necessary to remediate identified impacts to the Bank. The IRT will then determine whether:

a. The surviving mitigation provided by the Bank will cover the credits sold from the Bank; and,

b. Sufficient mitigation success at the Property despite the natural disaster will enable the sale of credits to continue.

2. The Sponsor will implement adaptive management measures necessary to remediate identified impacts within one year of the event. Subsequent adaptive management measures may be necessary. If the IRT determines that the Property is not performing as intended, credit sales will be suspended until the Sponsor has performed remedial work necessary to produce additional

1 A natural catastrophic event includes, but is not limited to, a flood equal to or greater in magnitude than the 100-year flood event, earthquake, drought, debilitating disease, wildfire, depredation, regional pest infestation, or fluviomorphic change. A human-caused catastrophic event includes, but is not limited to, war, insurrection, riot, or other civil disorders, spill of a hazardous or toxic substance, or fire. A deliberate and unlawful act includes, but is not limited to, the dumping of a hazardous or toxic substance, as well as significant acts of vandalism or arson. If any such act occurs the IRT, in consultation with the Sponsor, will determine what changes to the Bank and/or this MBI will be in the best interest of the Bank and the aquatic environment.

credits. The Sponsor will continue to provide monitoring reports as specified in this document unless determined to be unnecessary by the IRT.

3. If identified remedial actions are not taken within one year following the event, the IRT will close the Bank.

4. Instead of closing the Bank, the Sponsor may elect to restore damages resulting from the natural disaster to pre-disaster conditions. The IRT will re-evaluate the credits and provide to the Sponsor a revised monitoring and reporting schedule, credit determination and release schedule for the remaining credits based on the restoration effort.

E. Financial Responsibilities

Regardless of the cause of the remedial action, the Sponsor shall bear the financial responsibility for any and all remedial measures necessary to correct any deficiency caused by any means prior to successful attainment and verification of all Long-term Success Criteria by the IRT.

VIII. INSPECTION BY IRT AND HOLDER

The Sponsor and the Owner will allow access to the Property to members of the IRT or their agents or designees, and the Holder for the purpose of inspection, compliance monitoring, adaptive management, corrective measures and remediation consistent with the terms and conditions of this MBI. Inspecting parties will give a three day minimum notice to the Sponsor and/or the Owner prior to any site visit.

IX. FINANCIAL PROTECTION

A. The Sponsor agrees to provide Financial Assurances sufficient to ensure satisfactory completion for the work described in the Mitigation Work Plan and the Adaptive Management Plan. The Sponsor is establishing the Construction and Establishment (C&E) financial assurance to assure sufficient funds are available to perform work required to construct and maintain the Bank through successful attainment of long term success criteria. An assessment of the initial and capital costs and ongoing management funds required to manage and monitor the Bank is included in the Mitigation Work Plan and provides an estimate of work and cost requirements for construction and establishment of the Bank through achievement of long term success criteria. To fund this account, the Sponsor proposes to establish the Ponderosa Ranch of Pointe Coupee Mitigation Bank Construction and Establishment Fund by means of an escrow account in the amount of $238,666.98. The Financial assurance shall be reduced as success criteria are achieved and the probability decreases that those funds would be needed according to the following schedule:

1. Upon verification by the IRT that the construction work has been completed, the CEMVN, acting on behalf of the IRT, shall advise the Sponsor that the C&E financial assurance may be reduced by $141,427.94 for a balance of $97,239.04.

2. Upon verification by the IRT that the initial success criteria have been attained for all tracts, the CEMVN, acting on behalf of the IRT, shall advise the Sponsor that the C&E financial assurance may be reduced by $49,299.98 for a balance of $47,939.06.

3. Upon verification by the IRT that the interim success criteria have been attained for all tracts, the CEMVN, acting on behalf of the IRT, shall advise the Sponsor that the C&E financial assurance may be reduced by $33,491.93 for a balance of $14,447.13.

4. Upon verification by the IRT that the long-term success criteria have been attained for all tracts, the remaining C&E financial assurance shall be released to the Sponsor.

B. The Sponsor shall provide copies of annual status of the financial assurances to CEMVN upon request and/or in their monitoring reports.

C. The financial assurances shall guarantee payment to a third party, as determined appropriate by the CEMVN in consultation with the IRT, in the event that the Sponsor does not fulfill its obligations to perform, as specified in this MBI.

D. Payment to Sponsor, or if necessary, to a third party as identified by CEMVN, of a specified amount of the financial assurances shall be made upon written notification by CEMVN to the financial institution.

X. LONG-TERM PROTECTION AND MAINTENANCE

A. Conservation Servitude

The Owner shall burden the Property with a perpetual conservation servitude in accordance with Louisiana law, La. R.S. 9:1272. The conservation servitude shall be signed and filed in the Pointe Coupee Parish office with an executed copy of the MBI attached. After filing, a copy of the recorded conservation servitude, clearly showing the book, page and date of filing, will be provided to CEMVN prior to the release of credits.

Additionally, prior to execution of the conservation servitude, the Owner shall provide evidence that the entity proposed to hold the conservation servitude is a CEMVN approved Holder by virtue of being either a governmental body empowered to hold an interest in immovable property under the laws of the State of Louisiana or the United States of America; or is a non-profit corporation organized pursuant to Louisiana's Non-Profit Corporation Law, Title 12, Sections 201-269 of the Louisiana Revised Statues, the purposes or powers of which include retaining or protecting the natural, scenic, or open-space values of immovable property; assuring the availability of immovable property for agricultural, forest, recreational of open-space use; protecting natural resources; maintaining or enhancing air or water quality; or preserving the historical, archaeological or cultural aspects of unimproved immovable property. Upon execution of the conservation servitude previously described, the Holder shall hold and enforce the conservation servitude placed on the Property and the Property shall be protected in perpetuity.

Modification of the conservation servitude is not permissible without approval from the IRT. Any proposed modification to the conservation servitude, or to the rights and obligations created under it, requires Grantor to provide a 60-day notice to CEMVN and all other members of the IRT. The Grantor must provide this notice as a written request describing existing language and the requested modification to CEMVN and other IRT members. CEMVN, after consultation with other IRT members, will make the decision as whether or not to approve any modification to the conservation servitude.

The Owner understands that the conservation servitude applies to all the Property upon which it is placed, not just those portions of the Property identified as wetlands. No other human activities that result in the material degradation of habitat within the Bank shall occur without written authorization from CEMVN, through consultation with the IRT.

1. Prohibited Uses. No activities that result in the material degradation of habitat within the Bank shall occur unless written authorization is obtained. Prohibited uses include but are not limited to:

a. Construct any structure or structures on said Property;

b. Cut, burn, remove or destruct vegetation (including trees) on said Property except in accordance with IRT approved plan for controlling invasive species;

c. Build, or allow to be built, developed roads, trails or paths on said Property except as authorized by CEMVN;

d. Partition or enclosing the Property with fencing without written authorization from CEMVN;

e. Change the elevation of or contours (excavate or deposit dredged material) of said Property except in accordance with the Mitigation Work Plan or under an approved adaptive management plan;

f. Allow pumping, draining or causing said Property to be drained in any way;

g. Place, fill, store, or dump refuse, trash, vehicle bodies or parts, rubbish, debris, junk, waste, or other such items on the Property;

h. Allow land clearing or deposition of soil, shell, rock or other fill on the Property without written authorization from CEMVN;

i. Allow grazing of cattle or other domestic livestock on the Property.

j. Allow other commercial, industrial, agricultural, mineral exploration and extraction or residential uses of the Property without written authorization from CEMVN;

k. Allow the operation of any vehicle on the Property in a manner such that its use destroys/removes vegetation or alters the natural contours of the surface elevation except in accordance with the Mitigation Work Plan or under an approved adaptive management plan; or,

l. Allow any other activities, which are inconsistent with the establishment, maintenance and protection of the Property as identified in the Mitigation Work Plan.

2. Allowed Uses. The Owner/Sponsor shall not use or authorize the use of areas within the Bank for any purpose that interferes with its conservation purposes other than those exclusively specified below:

a. Monitoring of vegetation, soils and water;

b. Maintenance of wetlands, pre-existing trails, bridges, berms, dams, outlet and spillway structures, and other appurtenant facilities as identified in the Mitigation Work Plan;

c. Licensed hunting, fishing, trapping and non-consumptive recreational uses (i.e., hiking bird watching, etc.);

d. Ecological education that does not involve alteration, destruction or injury to any vegetation, habitat, trees, ground areas, etc;

e. Compliance with federal regulations or appropriate court orders;

f. Activities identified in Section VI necessary to implement and maintain the development of the Bank in accordance with this MBI;

g. Any activity that has received authorization from CEMVN through a DA permit and coordinated through the IRT. The owner, sponsor and/or project proponent understand that the construction, operation and abandonment of any authorized activity must be done in such a manner that minimizes direct, secondary and cumulative adverse impacts to the bank. At the termination of the authorized activity, the site will be restored to pre-project elevations and planted with a mixture of appropriate wetland species. The Owner and Sponsor acknowledge that such activities have the potential to reduce the total amount of credits available in the bank depending on the extent of the impacts to the bank.

B. Long-Term Maintenance Plan

The Long-Term Maintenance Plan is outlined in the Mitigation Work Plan.

XI. BANK USE

Credits derived from the ecological benefits associated with implementation and maintenance of the Bank may be used as compensatory mitigation for unavoidable impacts to waters of the United States, including wetlands, that result from activities authorized under

Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act provided such activities have met all applicable requirements. Additionally, these credits derived may be used as compensation for wetland impacts outside the New Orleans District or for other programs provided approval from CEMVN is obtained first. In instances where credits are used for purposes other than compensation for DA permits, the determination of amount of acres necessary to satisfy those compensatory requirements will be made by the agency in charge of that respective program. Regardless of the program for which an ecological credit is used that acreage is deducted from total acreage of the Bank and may not be used again.

A. Bank Service Area

The Bank is established to provide compensation for impacts to bottomland hardwood and baldcypress swamp wetlands, in U.S.G.S. Hydrologic Cataloging Unit 08070300 of the Terrebonne drainage basin. The primary service area will be the 8-digit hydrologic unit in which the bank is located which is Hydrologic Unit Code (HUC) 08070300 (Lower Grand Watershed). The secondary Service area will be the HUC 08090302 (West Central Louisiana Coastal Watershed).

B. Projects Eligible to Use the Bank

Only after CEMVN has determined that the Bank is appropriate can the Bank be used to satisfy a permittee's mitigation responsibilities. Generally, the Bank will not be appropriate for adverse impacts occurring outside the primary Bank service area and/or impacts that are to other wetland types. However, CEMVN may consider use of the Bank on a case-by-case basis if, after consulting with the other regulatory and resource agencies, they determine that the Bank offers ecologically preferable compensation to that available within the impacted watershed. To compensate for out-of-kind impacts and/or impacts in other watersheds may increase the amount of required mitigation.

C. Determination of Bank Credits

To determine the amount of acres required to offset a particular impact to wetlands, CEMVN will use either best professional judgment or an assessment method to determine the number of credits per acre available at the bank and the number of credits lost as a result of an impact. The same assessment method will be used to calculate both credits available and credits lost.

In the event best professional judgment is used instead of a model to assess the compensatory mitigation requirements, CEMVN will use the following table of ratios (impact acres to mitigation acres) to determine the amount of mitigation to offset the impact.

Type of Mitigation	Habitat Quality of Impacted Wetland		
	Low	Medium	High
Re-establishment	1:1	1:1.5	1:2.5
Rehabilitation	1:1.1	1:2	1:4
Enhancement	1:1.2	1:4	1:6

D. Schedule of Credit Availability

Credit release is tied to achieving all the milestones within the success criteria at specific monitoring times as outlined in the Mitigation Work Plan, Section V. B.

E. Credit Transactions

1. Stipulations regarding the Sale of credits

a. The Sponsor agrees to assume legal responsibility for the permittee's compensatory mitigation requirements identified in a permittee's DA permit once the Sponsor enters the transaction into RIBITS which transfers Bank credits to that permittee's permit. Immediately following this entry, the Sponsor will provide written documentation (Attachment D) that confirms that he has accepted the legal responsibility for providing the required compensatory mitigation. The written transaction documentation shall be signed by the Sponsor and shall state that the Sponsor has accepted legal responsibility for the compensatory mitigation required by the DA permit. In accepting this responsibility, the Sponsor accepts the legal responsibility for the long-term management, maintenance, monitoring and protection of the restored wetlands represented by the transferred credits. If the Sponsor fails to provide the required compensatory mitigation, CEMVN may pursue enforcement measures against the Sponsor to ensure compliance with the mitigation requirements of the DA permit.

b. Sponsor shall complete and sign the written transaction documentation referenced in paragraph E.1.a above and forward it to CEMVN the same date it enters the transaction information into RIBITS.

c. The Sponsor will not sell credits prior to receiving approval from CEMVN. The Sponsor will contact the appropriate CEMVN project manager for DA permit transactions to verify acreage requirements and necessary ledger information. Where a credit transaction is not related to a CEMVN DA permit action, the Sponsor must contact the CEMVN bank project manager for approval to sell those credits. Sale will generally be approved unless there is a DA permit pending that proposes to use all or part of the requested credits. A credit transaction for a CEMVN DA permit will take precedence over all other credit transactions. CEMVN will generally provide written confirmation of its decision but may give verbal approval and then document its decision in follow-up correspondence.

d. The Sponsor shall not commit to providing mitigation that is not available or is committed for other projects. Should the number of credits debited exceed the number created, the

Sponsor shall secure mitigation from another bank within the watershed to fully offset the credit shortage.

e. Credits will be sold in no less than tenth acre increments.

2. Procedure for selling Bank credits

a. CEMVN, with input from interested resource agencies, will determine the credits that must be secured to fully compensate for a proposed project's wetland impacts when those impacts are associated with a DA permit. The CEMVN project manager will inform the applicant in writing that the Bank is appropriate for offsetting the unavoidable adverse impacts associated with his proposed project. At this point, the applicant may choose the Bank or another appropriate bank to perform his compensatory mitigation or he may opt to perform his own appropriate permittee-responsible mitigation project. The amount of mitigation required is determined by the CEMVN project manager and will be rounded to the nearest one-tenth (0.1) acre.

b. Should the permit applicant select this Bank, the permit applicant will contact the Sponsor and arrange with the Sponsor to purchase the necessary acres as determined by CEMVN. The Sponsor must then contact the appropriate CEMVN party to obtain approval as stipulated in 1.a above.

3. Credit Sale Notification

a. Upon contracting for the credit sales, the Sponsor shall enter the necessary information into the Regional Internet Bank Information Tracking System (RIBITS). The information will include the Corps jurisdiction, date of transaction, permittee name, credits debited, permit number, wetland type impacted, acres impacted, impact project's USGS 8-digit HUC, and impact latitude and longitude.

b. No matter what arrangements are made between the Sponsor and permit applicant (including pricing, graduated payments, phasing in of the compensation, etc.), the amount of acreage required by the CEMVN DA permit will be deducted from the Bank's balance at the time the permit is issued.

F. Requirements for Initial Credit Release

No credits will be released until the Sponsor has provided a signed statement stating that all of the following requirements have been met and has provided copies of the following executed documents, as appropriate:

1. Permits: Obtain all necessary permits or other authorizations needed to construct and maintain the Bank. This MBI does not fulfill or substitute for such authorization.

2. Holder Qualifications: Evidence that the entity proposed to hold the conservation servitude is a CEMVN approved Holder.

3. Conservation Servitude: A copy of the executed perpetual conservation servitude with a copy of this MBI as recorded in the Mortgage and Conveyances Records Office of the parish in which the Property is located.

4. Financial Assurance: Documentation establishing the C&E financial assurances stipulated in Section IX and the Long-Term Maintenance and Protection endowment described in Section X of this MBI.

5. Property Ownership: A title search that identifies all known encumbrances including mortgages, liens, rights-of-way, servitudes, easements, etc. and documentation that the conservation servitude is not subordinate to any other easement or major lien. Sponsor shall provide a copy of the recorded document evidencing that any mortgages encumbering the property have been subordinated to the conservation servitude.

6. Execution of MBI: MBI signed by the Owner, Sponsor and CEMVN District Commander or his representative and approval by all participant IRT agencies; and

7. Work Schedule: Submission of the timetable for implementing work identified in the permit, Mitigation Work Plan or elsewhere in this MBI.

G. Subsequent Credit Releases

The Sponsor shall provide to CEMVN and the IRT a monitoring report or information necessary to document successful attainment of required milestones before each credit release. CEMVN, with assistance from the IRT, will determine whether the information provided is accurate and, in its opinion, whether those milestones were achieved. CEMVN will advise the Sponsor and the IRT in writing of its findings and the amount of credits that will be released.

XII. MODIFICATION OF THIS MBI

A. Minor Modification to MBI

1. This MBI is subject to written modification as mutually agreed to by the IRT and the Sponsor for such reasons as changes reflecting adaptive management of the Bank, credit releases, changes in credit releases and credit release schedules. Changes to this MBI that the district engineer determines not to be significant will follow procedures in paragraph 332.8(g)(2) streamlined review process.

2. Should changes in this MBI be required by the IRT that are not acceptable to the Sponsor, the Sponsor may elect to end his participation and close the Bank. At that time, the IRT will

a. Revise the Bank's credit allotment based on the work completed at closure,

b. Review the credits sold by the Bank, and then

c. Determine whether the previously sold acreage is sufficient to balance mitigation needs or whether additional acreage is needed to be left in the Bank to balance the credits mitigated at the Bank.

3. The conservation servitude will remain in force on that portion of the Property remaining in the Bank and a sufficient buffer to protect the integrity of the Bank.

B. Addenda to Bank

1. The Sponsor may include additional acreage in the Bank as modifications to this MBI, following procedures in paragraph 332.8(g)(1) provided that (1) the additional acreage is located on the same parcel of land or on a parcel of land contiguous to the Bank and (2) the natural composition, structure, functions and processes preformed by the restored/enhanced wetland community are the same as those outlined in this MBI. For the modification of this MBI, the amendment will contain the following:

a. Detailed description of existing conditions of the Property identifying existing and prior land uses, vegetation, hydrology alterations and soils;

b. A Mitigation Work Plan that details the proposed hydrologic and vegetative restoration/enhancement work that is necessary to produce the mitigation credits;

c. Drawings depicting the site showing its location to other mitigation sites authorized by this MBI, different mitigation types, soils and hydrology; also drawings depicting the work required; vicinity map, a plan view depicting the proposed work and typical cross-sections of that work;

d. A Department of the Army issued wetland determination;

e. A title opinion and survey clearly identifying any existing encumbrances on the Property;

f. A draft conservation servitude;

g. A draft of the mechanism to be used to secure the necessary Construction and Establishment financial assurance; and

h. A draft of the mechanism to be used to establish the necessary Long-Term Maintenance and Protection account.

2. CEMVN will determine if the work identified in the Mitigation Work Plan requires a DA permit. A DA permit application is not a required with the prospectus, but the Sponsor may choose to submit an application at this time as obtaining any and all permits is a prerequisite to selling credits.

3. A public interest review will be required for each addendum. The prospectus, Mitigation Work Plan and drawings will be advertised by public notice for a minimum of thirty days to obtain public comments.

4. The IRT will evaluate each proposed property. The evaluation will typically require an inspection of the property and review of the prospectus and restoration plan. If warranted, the IRT will recommend modifications to the proposed restoration plan. By signing this MBI, the agencies are under no obligation to accept future addenda. Each addendum will be evaluated on its own merit.

5. A separate credit assessment will be conducted to determine habitat values of each addendum.

6. The mutually agreed upon Mitigation Work Plan will be signed by designated authorities for each IRT member and included as an amendment to this MBI and subject to all its requirements, conditions and terms.

C. Exclusions of Approved Mitigation Site

1. The Sponsor may elect to exclude a portion of the Property on which no credits have been sold from the Bank. However, notification and approval by the IRT must be obtained by the Sponsor prior to removal from the Bank.

2. Reduction in Bank size may adversely affect future releases of mitigation credits and financial assurances. Additionally, the IRT will re-evaluate the credit value per acre for the portion of the site remaining in the Bank. Should the re-evaluation of credits determine that debits exceed the available credits produced by the acres remaining in the Bank, the IRT may require that a portion of the area to be excluded remain in the Bank to make up the credit difference caused by the reduction in Bank size.

3. After IRT has approved the exclusion, the Owner may, with approval from the Sponsor, Holder and the IRT, modify the conservation servitude to remove the servitude from that portion of the Property excluded.

D. TERMINATION OF THIS MBI

Should the IRT determine that the Sponsor is in material default of any provision of this MBI, the IRT, acting through the CEMVN may notify the Sponsor that the sale or transfer of any Credits will be suspended until the appropriate deficiencies have been remedied. Upon notice of such suspension, the Sponsor agrees to immediately cease all sales or transfers of Mitigation Credits until the IRT informs the Sponsor that sales or transfers may be resumed. Should the Sponsor remain in default, the IRT, acting through CEMVN, may terminate the MBI and any subsequent Bank operations. Upon termination, the Sponsor agrees to perform and fulfill all obligations under this MBI relating to Credits that were sold or transferred prior to termination.

If circumstances warrant, such as misrepresentation, misapplication, misappropriation, improper management, non-disclosure of pertinent information or non-compliance with the terms of this MBI by the Sponsor, CEMVN and other members may void their recognition of the Bank as well as terminate their future participation in this MBI. Any executed and recorded conservation servitude pertaining to wetlands restored pursuant to mitigation contracts and this MBI will remain in full force and effect, and as waters of the United States, any subsequent discharges would require Section 404 authorization. Upon termination of this MBI, the conservation servitude shall remain on those lands for which credits were sold for the use as compensatory mitigation for adverse impacts associated with DA permits. In addition, a buffer sufficient to protect the integrity of the Bank shall be established and protected by the conservation servitude. The revised conservation servitude shall be recorded in the Mortgage and Conveyance Office of the parish where the land is located with the holder acting as the long-term manager. All funds in the escrow account, if any, will be forfeited to the Holder or to a long-term Steward or other appropriate CEMVN designee who agrees to assume the maintenance and monitoring of the restored habitat in accordance with this MBI. Additionally, intentional misrepresentation, misappropriation, non-disclosure of pertinent information, non-compliance with the terms of this MBI, or any other intentional illegal act may be prosecuted to the fullest extent of the law.

E. Termination of Participation

Any IRT members may terminate their participation upon written notification to all signatory parties without invalidating this MBI. Participation of the IRT member seeking termination will end 30 days after written notification. Termination by one member of the IRT of its involvement in this MBI shall not terminate or affect the relationship between the remaining members of the IRT, toward each other or the Sponsor or Owner, under this MBI. Remaining Credits authorized under the authority of the withdrawing agency will no longer be available for transfer. Nothing in this Section is intended or shall be construed to limit the legal or equitable remedies (including specific performance and injunctive relief) available to the IRT members in the event of a threatened or actual breach of this MBI.

XIII. TRANSFER OF PROPERTY OR SPONSORSHIP

All transfers of any interest in the Property or sponsorship are subject to the applicable provisions of the Conservation Servitude.

A. Transfers of Bank Property

1. The Owner may sell, assign, convey or otherwise transfer its interest in the Property at any time provided that any such transfer on or after the execution date of this MBI must be made in accordance with and subject to this MBI and the Conservation Servitude and the following conditions:

a. The transferee is able to assume and agrees to assume the obligations of the Owner as set forth in this MBI; and

b. The transferee understands and agrees to the allowed/prohibited uses of the Property as set forth in the conservation servitude.

2. Notice of Property Transfer

a. The Owner must provide notice to CEMVN and to the Sponsor (if different from the Owner) that he intends to transfer the Property at least 60 days prior to the transfer. This notice must include the proposed transferee's name and the name of its authorized representative, if different, its address and phone number, the anticipated date of the transfer, and a statement signed by the proposed transferee that the Owner has:

1) Provided to it copies of this MBI and the Conservation Servitude;

2) Explained the allowed/prohibited uses of the Property; and

3) Advised that any transfer of the Property is subject to the terms and conditions contained in the MBI.

b. The Sponsor also must provide notice to CEMVN of any transfer of the bank Property by the Owner at least 60 days prior to the transfer or within 5 business days of learning of such transfer, whichever is later. This obligation continues until the Sponsor has provided the required notice to CEMVN even after the Property has been transferred. The Owner and the Sponsor may submit a joint notice, in which case the notice shall be clearly identified as such. The Sponsor's notice must include the proposed transferee's name and the name of its authorized representative, if different, its address and phone number, the anticipated date of the transfer, and a statement signed by the proposed transferee that the Sponsor has:

1) provided to it copies of this MBI and the Conservation Servitude;

2) explained the allowed/prohibited uses of the Property; and

3) advised that any transfer of the Property is subject to the terms and conditions contained in the MBI.

c. After receipt of the notice of transfer, the IRT may seek additional information about the proposed transferee and its fitness to assume the obligations of Owner from the current Owner, the proposed transferee, or from the Sponsor. Additionally, the Sponsor may submit any information it deems relevant to the transfer to the IRT.

d. Any transfer of the ownership made without the required notice by Sponsor may, at the discretion of the IRT, result in a suspension of credit sales until the Sponsor provides the information required in the notice.

3. At the time of the transfer of the Property, the transferee must sign this MBI as Owner and attest as follows, which statements shall be typed above the transferee's signature on the MBI:

a. That it has read and understands and agrees to the terms and conditions of the MBI and the conservation servitude; and

b. That it agrees to assume all obligations and responsibilities of the Owner contained in this MBI.

4. Upon execution of the MBI by the transferee/new owner, all obligations of the Owner pursuant to this MBI become those of the transferee/new owner.

5. From and after the date of any transfer by the Owner of its interest in the Property, the transferor shall have no further obligations hereunder and all references to the Owner in this MBI shall thereafter refer to the transferee, except that the transferor's liability for acts, omissions, breaches or other compliance issues occurring prior to the transfer shall survive the transfer.

B. Transfer of Sponsorship

1. The Sponsor may sell, assign, convey or otherwise transfer its interest in the Bank at any time provided that the Sponsor is in full compliance with all requirements of this MBI (including all financial assurance requirements) and the transferee provides a written statement agreeing to assume the obligations of the Sponsor as set forth in this MBI.

2. Notice of Change of Sponsor

a. The Sponsor must provide notice of its intent to transfer the sponsorship to the IRT, through CEMVN, and to the Owner at least 60 days prior to the transfer. This notice must include:

1) The proposed transferee's name and the name of its authorized representative, if different, its address and phone number, and the anticipated date of the transfer;

2) A statement signed by the proposed transferee that: (a) the Sponsor has provided to it copies of this MBI, the conservation servitude, ledgers and financial statements; and (b) it will assume all of the obligations and responsibilities of the Sponsor as set forth in the MBI upon transfer of the bank;

3) The proposed transferee's qualifications (background, resources and experience) to perform the Sponsor's responsibilities;

b. The Sponsor must also provide in the notice information relative to the current condition of the Bank, which information must also be provided to the proposed transferee. This information must include:

1) Current (*i.e.*, within 30 days) financial statements for all financial assurances issued by the providers of those assurances;

2) A current ledger listing all credit transactions for the Bank and the required information for each transaction; and

3) A monitoring report providing a description of current conditions including: (a) a discussion of the status of the restoration of wetland hydrology and remaining work (if any) necessary to fully establish hydrology; (b) the general condition of seedlings (survivorship by species) and a statement as to whether the survivability milestone will be met at the next monitoring report; and (c) an indication of the degree of exotic/invasive species density (average stems per acre) and measures required to control them.

3. At the time of the transfer of the sponsorship, the transferee must sign this MBI as the Sponsor and attest as follows, which statements shall be typed above the transferee's signature on the MBI:

a. That it has read and understands and agrees to the terms and conditions of the MBI and the Conservation Servitude; and

b. That it agrees to assume all of the obligations and responsibilities of the Sponsor contained in this MBI.

4. The new Sponsor must provide to CEMVN a copy of the executed MBI and a copy of the executed Mitigation Bank Transfer Form.

5. Any transfer of the sponsorship made without the written 60-day notification to the IRT may, at the discretion of the IRT, result in suspension of credit sales until the transferee/new Sponsor provides the information required in the notice, signs the MBI as Sponsor, and provides a copy of the executed MBI to the IRT.

6. From and after the date of any transfer by Sponsor of its interest in the sponsorship, the transferor shall have no further obligations hereunder and all references to Sponsor in this MBI shall thereafter refer to the transferee, except that the transferor's liability for acts, omissions, breaches or other compliance issues occurring prior to the transfer shall survive the transfer.

XIV. ESTABLISHMENT OF STEWARD

Should the Sponsor choose to designate a Long-term Steward, the Sponsor will provide CEMVN with written notice of his intent to designate one at least 60 days prior to the effective date of the Steward's assumption of the responsibilities. This notice must include the proposed Steward's name and the name of its authorized representative, if different, its address and phone number, the anticipated date of the transfer, and a statement signed by the proposed Steward that the Sponsor has:

A. Provided to it copies of this MBI and the Conservation Servitude;

B. Explained the allowed/prohibited uses of the Property; and

C. Transferred any remaining C&E financial assurance and Long-term Maintenance and Protection endowment funds to accounts established by the Long-term Steward and approved by CEMVN.

All funds in the Long-term Management and Protection Fund will be transferred to the designated Long-term Steward.

XV. BANK LIFE

Bank life ends when all success criteria have been attained and all credits have been sold. At this point all construction and establishment financial assurance have been returned to the Sponsor and long term management is initiated. Unless such responsibility is transferred, with prior approval of CEMVN, to a Long-term Steward, the Sponsor will remain responsible for: 1) the compensatory mitigation requirements for any DA permit for which it sold Bank credits; and 2) the long-term management, maintenance, monitoring and protection of the mitigation represented by those credits.

XVI. OTHER PROVISIONS

A. Disclaimer: Whereas, this MBI does not in any manner affect statutory authorities and responsibilities of the signatory parties.

B. Non-reporting NWP: The Sponsor agrees not to utilize a non-reporting Nationwide Permit or Regional Permit under Section 404 of the Clean Water Act to impact any Waters of the United States on the Property. Notification shall be required for the use of any Nationwide Permit and/or Regional Permit in connection with this Bank.

C. Dispute Resolution: Resolution of disputes about amendments to this MBI shall be in accordance with 33 CFR § 332.8(e). If a dispute arises about the application of this MBI any party may raise the issue to CEMVN. CEMVN will convene a meeting of the IRT, or initiate another appropriate forum for communication, typically within twenty days of receipt of notice of the dispute. CEMVN will fully consider comments provided by the IRT and the Sponsor, if provided, in reaching its decision. Ultimately CEMVN is responsible for making final decisions regarding the use of the Bank. Disputes related to satisfaction of success criteria may be subject to independent review from government agencies or academia that is not part of the IRT. The IRT will evaluate this input and determine whether the success criteria are met.

D. Overall Performance: If the IRT determines that the Bank is not performing according to the standards and criteria set forth in this MBI, credit sales will be suspended until the Sponsor has developed a remedial action plan and performed the work defined in the remedial action plan necessary to produce additional credits. The Sponsor will provide to the IRT the remedial action plan within 60 days of notification of any deficiency. Following IRT approval of the remedial action plan, the Sponsor will conduct the remedial action measures prior to the end of the nearest growing season. Subsequent adaptive management measures may be required by the IRT. Sale of credits will not resume until remedial actions have been taken. The Sponsor will continue to

provide monitoring reports as specified in this document unless determined to be unnecessary by the IRT.

E. Specific Language of MBI Shall Be Controlling: The Parties intend the provisions of this MBI and each of the documents incorporated by reference in it to be consistent with each other, and for each document to be binding in accordance with its terms. To the fullest extent possible, these documents shall be interpreted in a manner that avoids or limits any conflict between or among them. However, if and to the extent that specific language in this MBI conflicts with specific language in any document that is incorporated into this MBI by reference, the specific language within the MBI shall be controlling.

F. Notice: Any notice required or permitted hereunder shall be deemed to have been given either (i) when delivered by hand, or (ii) three (3) days following the date deposited in the United States mail, postage prepaid, by registered or certified mail, return receipt requested, or (iii) sent by Federal Express or similar next day nationwide delivery system, addressed as follows (or addressed in such other manner as the party being notified shall have requested by written notice to the other party):

Owner, Succession of John E. Jumonville, Sr and Claude Coulon Jumonville
7514 Ponderosa Lane
Ventress, LA 70783
Attn: Claude Coulon Jumonville, Independent Administrator
Phone: (225) 638-8615
Email: ponderosaranch@bellsouth.net

Sponsor, Delta Land Services, LLC
1090 Cinclare Drive
Port Allen, LA 70767
Attn: George Guerin, Chief Operating Officer
Phone: (225) 343-3900
Email: george@deltaland-services.com

U.S. Army Corps of Engineers New Orleans District (CEMVN)
7400 Leake Ave.
New Orleans, Louisiana 70118
Attn: Brian Breaux
Phone: (504) 862-1938
Email: brian.w.breaux@mvn02.usace.army.mil

Region VI of the U.S. Environmental Protection Agency (EPA)
1445 Ross Avenue
Dallas, Texas 75202
Attn: Tamara Mick
Phone: 214-665-7134
Email: mick.tamara@epa.gov

U.S. Fish and Wildlife Service (FWS)
646 Cajundome Blvd., Ste. 400
Lafayette, La 70506
Attn: Patti Holland
Phone: 337-291-3121
Email: Patti_Holland@fws.gov

Louisiana Department of Wildlife and Fisheries (LDWF)
2000 Quail Dr., Room 433
Baton Rouge, Louisiana 70898-9000
Attn: Kyle Balkum
Phone: 225-765-2819
Email: kbalkum@wlf.louisiana.gov

G. Entire Agreement: This MBI constitutes the entire agreement between the parties concerning the subject matter hereof and supersedes all prior agreements or undertakings.

H. Invalid Provisions: In the event any one or more of the provisions contained in this MBI are held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provisions hereof, and this MBI shall be construed as if such invalid, illegal or unenforceable provision had not been contained herein.

I. Headings and Captions: Any paragraph heading or captions contained in this MBI shall be for convenience of reference only and shall not affect the construction or interpretation of any provisions of this MBI.

J. Counterparts: This MBI may be executed by the parties in any combination, in one or more counterparts, all of which together shall constitute but one and the same instrument.

K. Binding: This MBI shall be immediately, automatically, and irrevocably binding upon the Sponsor and its heirs, successors, assigns and legal representatives upon execution by the Sponsor and the CEMVN, even though it may not, at that time or in the future, be executed by the other potential parties to this MBI. The execution of this MBI by EPA, LDWF, or the U.S. Fish and Wildlife Service, or other agency, city or county shall cause the executing agency to become a party to this MBI upon execution, even though all or any of the other potential parties have not signed the MBI. Execution does not signify the agencies' agreement with the use of credits in the Bank in connection with any specific permit or project.

L. Liability of Regulatory Agencies: The responsibility for financial success and risk to the investment initiated by the Sponsor rests solely with the Sponsor. The regulatory agencies that are parties to this MBI administer their regulatory programs to best protect and serve the public's interest in its waterways, and not to guarantee the financial success of Banks, specific individuals, or entities. Accordingly, there is no guarantee of profitability for any individual Bank. Sponsors should not construe this MBI as a guarantee in any way that the agencies will ensure sale of credits from this Bank or that the agencies will forgo other mitigation options that may also serve the public interest. Since the agencies do not control the number of mitigation

banks proposed or the resulting market impacts upon success or failure of individual banks, in depth market studies of the potential and future demand for credits are the sole responsibility of the bank proponent.

_____ _____

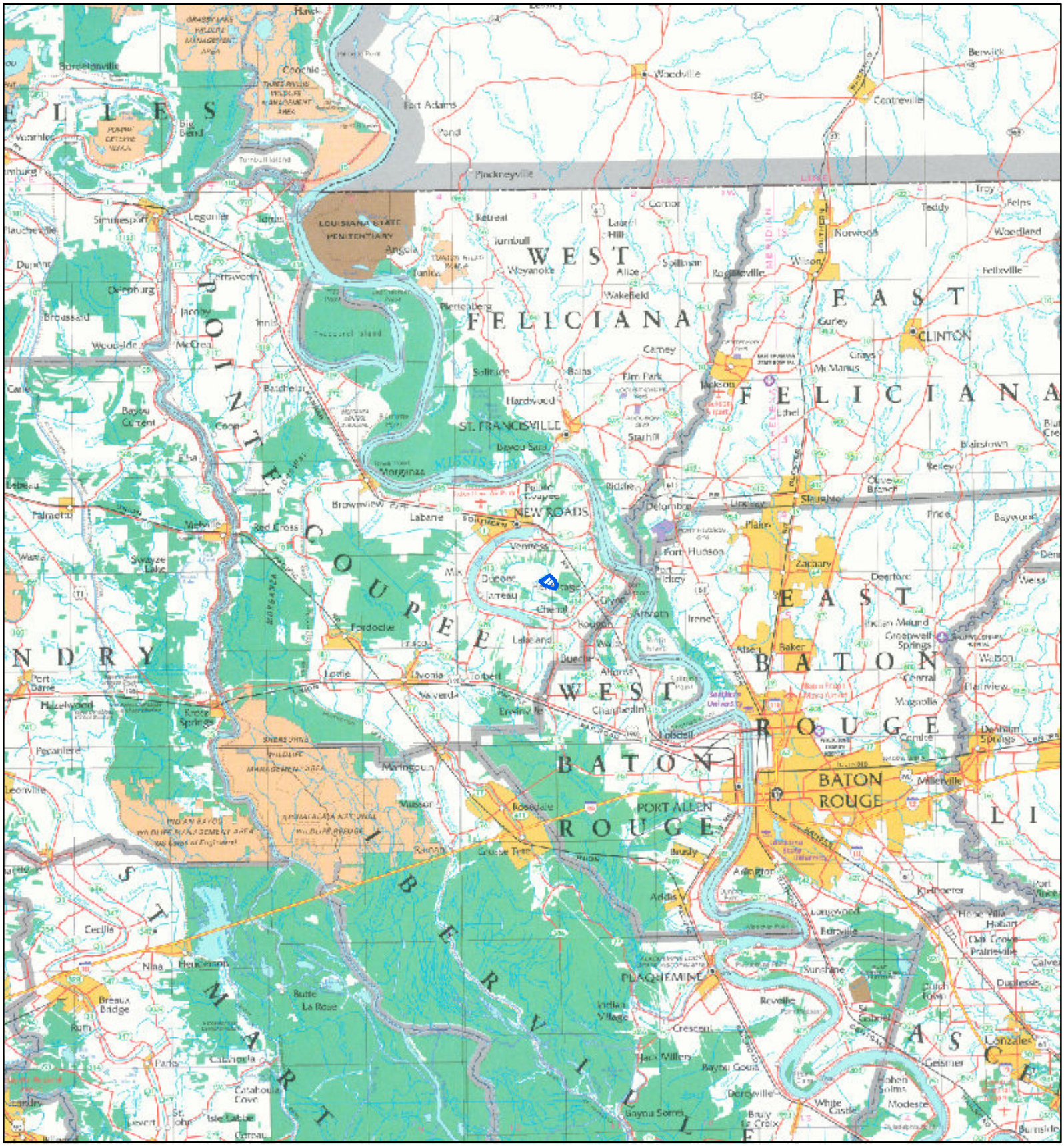
CLAUDE COULON JUMONVILLE DATE
PONDEROSA RANCH OF POINTE COUPEE MITIGATION BANK

_____ _____

GEORGE GUERIN DATE
PONDEROSA RANCH OF POINTE COUPEE MITIGATION BANK

PETE J. SERIO CHIEF, REGULATORY BRANCH	DATE

Attachment A



Legend

Project Area (323.8 Acres)

8 4 0 8

Miles

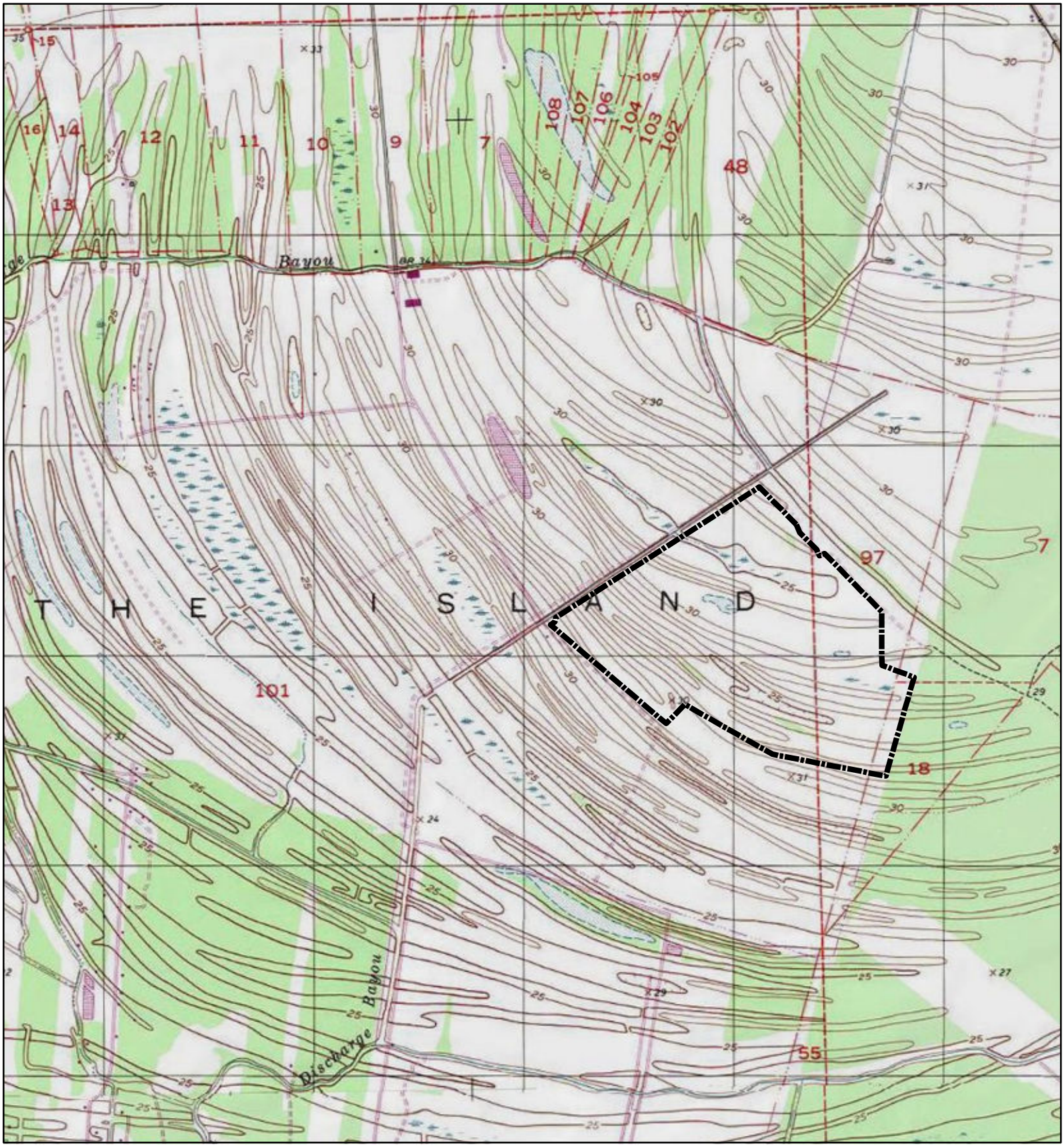
Ponderosa Ranch of Pointe Coupee Mitigation Bank

VICINITY MAP

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/2012	
Map No. : M01_VicinityMap.mxd	

MAP 1



Legend

Project Area (323.8 Acres)

2,000 1,000 0 2,000

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

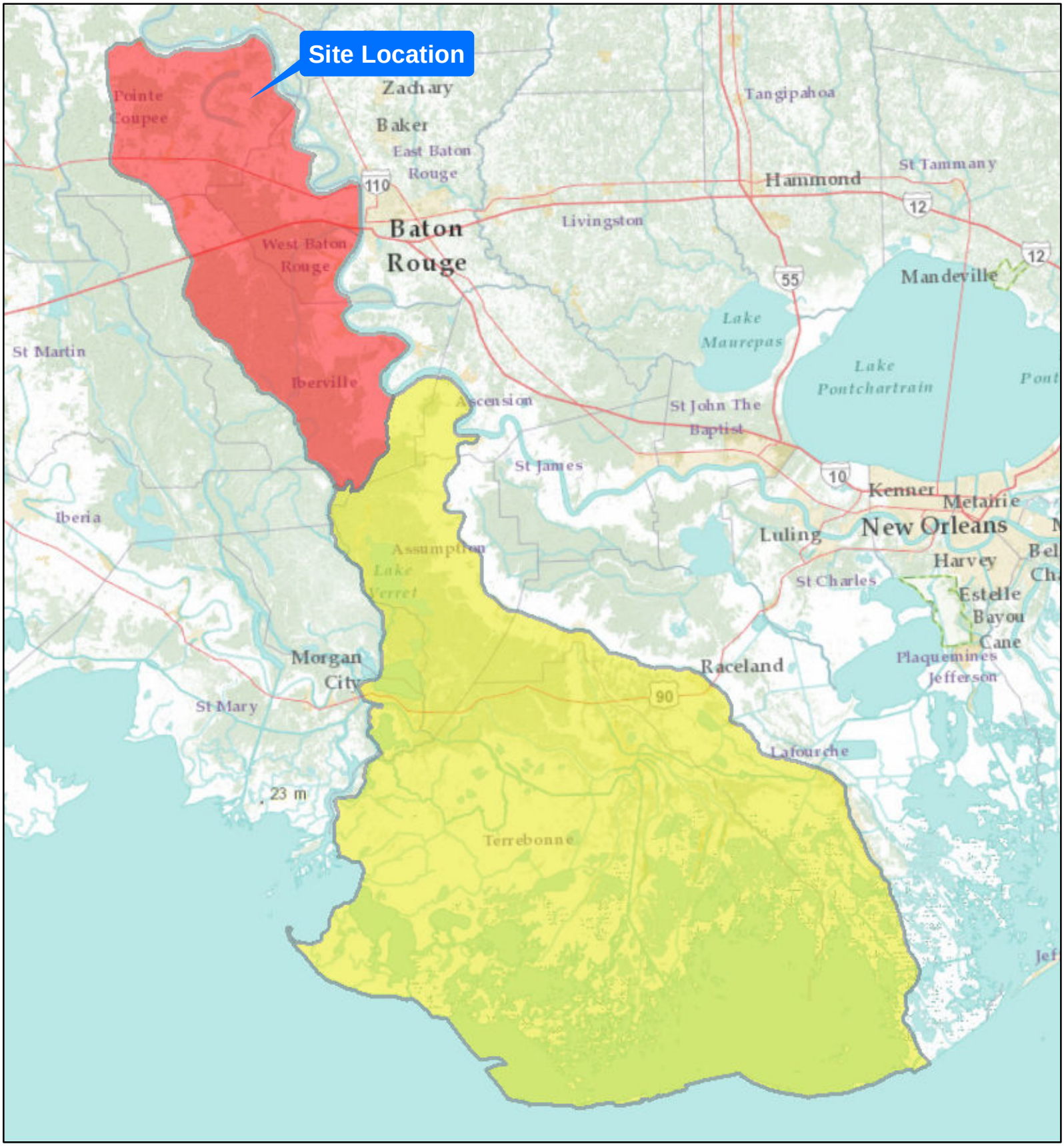
USGS 7.5-MINUTE QUADRANGLE

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/2012	
Map No. : M02_QuadMap.mxd	

DELTA LAND SERVICES

MAP 2



Legend

- Primary Service Area (Lower Grand 08070300)
- Secondary Service Area (West Central LA Coastal 08090302)

N

14 7 0 14

Miles

Ponderosa Ranch of Pointe Coupee Mitigation Bank

PROPOSED BANK SERVICE AREAS

Pointe Coupee Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	11/14/2012
Map No. :	M03_ServiceArea.mxd

DELTA LAND SERVICES

MAP 3

Attachment B

LAW OFFICES OF
JEWELL & JEWELL
P.O. BOX 156
143 EAST MAIN STREET, SUITE 3
NEW ROADS, LOUISIANA 70760

J.P. JEWELL, JR. (1910-2007)
JOHN WAYNE JEWELL
STEPHEN P. JEWELL

TELEPHONE (225) 638-3311
FAX (225) 638-8319

December 2, 2011

Delta Land Services, L.L.C.
1090 Cinclare Drive
Port Allen, Louisiana 70767

Re: Title Opinion; Jumonville Property
323.76 Acres; Pointe Coupee Parish

Gentlemen:

As requested, I have examined an abstract of the indices to the conveyance and mortgage records of the Parish of Pointe Coupee, State of Louisiana, for the period commencing on December 10, 1947 and ending on July 6, 2011, prepared by Beta Land Services, L.L.C., and I also personally examined the indices to said conveyance and mortgage records for the period commencing on July 6, 2011 and ending on October 25, 2011, all pertaining to the following described property, to-wit:

A certain tract or parcel of land, situated in Section 97, Township 5 South, Range 11 East, and Section 101, Township 5 South, Range 10 East, in Pointe Coupee Parish, Louisiana, which tract or parcel of land contains **323.76 acres** and is more particularly shown and depicted on a plat of survey made by Charles R. St. Romain, R.P.L.S., dated June 28, 2011, and revised November 23, 2011, which plat of survey is made a part hereof by reference for greater certainty of description. Said tract or parcel of land is more particularly described according to said plat of survey as follows:

For a point of reference commence at a cross-tie marking the apparent corner common to Section 55, Township 5 South, Range 10 East, and Sections 18, 97 and 98, Township 5 South, Range 11 East; thence proceed North 33° 34' 17" East a distance of 105.03 feet to a calculated point; thence run North 16° 48' 23" East a distance of 3,007.60 feet to a calculated point and the point of beginning (P.O.B.). (Northing of 777660.449 and Easting of 3261139.379 using State Plane, NAD83, La South, US Survey Feet).

From the P.O.B. run North 78° 17' 13" West a distance of 1,805.64 feet to a calculated point; thence North 59° 31' 24" West a distance of 1,575.41 feet to a calculated point; thence South 45° 14' 25" West a distance of 417.66 feet to a calculated point; thence North 48° 38' 17" West a distance of 2,371.70 feet to a calculated point; thence North 56° 28' 53" East a distance of 81.32 feet to a calculated point; thence North 09° 23' 01" East a distance of 71.42 feet to a calculated point; thence North 58° 12' 41" East a distance of 3,780.42 feet to a calculated point; thence South 43° 38' 32" East a distance of 821.75 feet to a calculated point; thence South 23° 43' 42" East a distance of 135.91 feet to a calculated point; thence South 43° 47' 06" East a distance of 377.14 feet to a calculated point; thence South 23° 47' 11" East a distance of 102.80 feet to a calculated point; thence North 70° 33' 17" East a distance of 86.15 feet to a calculated point; thence South 43° 42' 49" East a distance of 1,268.81 feet to a calculated point; thence South 0° 29' 19" West a distance of 840.31 feet to a calculated point; thence South 68° 41' 38" East a distance of 535.33 feet to a calculated point; thence South 16° 48' 24" West a distance of 1,605.53 feet back to the P.O.B., consisting of 323.76 acres.

Based on the aforementioned abstract to the indices to said records during said time period, and my update of same through October 25, 2011, it is my opinion that as of said date a good, valid and merchantable title to the hereinabove described property was vested in fee simple in:

SUCCESSION of JOHN E. JUMONVILLE (sometimes also known as John E. Jumonville, Sr. or J. E. Jumonville, Sr.),

and

CLAUDE COULON JUMONVILLE;

in the proportions of an undivided three-fourths (3/4ths) interest to the Succession of John E. Jumonville, and an undivided one-fourth (1/4th) interest to Claude Coulon Jumonville;

free from mortgages, liens, encumbrances or defects, except:

1. A multiple indebtedness mortgage by Succession of John E. Jumonville, Sr. and Claude Coulon Jumonville, dated February 20, 2003, securing an indebtedness to Peoples Bank and Trust Company of Pointe Coupee, up to a maximum amount of $50,000,000.00. Said mortgage is filed and recorded under Entry No. 207 of Mortgage Book 324, records of Pointe Coupee Parish, Louisiana.

2. A multiple indebtedness mortgage by Claude Coulon Jumonville, dated February 25, 2004, securing an indebtedness to Peoples Bank and Trust Company of Pointe Coupee, up to a maximum amount of $50,000,000.00. Said mortgage is filed and recorded under Entry No. 146 of Mortgage Book 347, records of Pointe Coupee Parish, Louisiana.

3. A multiple indebtedness mortgage by Claude Coulon Jumonville, dated December 22, 2005, securing an indebtedness to Peoples Bank and Trust Company of Pointe Coupee, up to a maximum amount of $50,000,000.00. Said mortgage is filed and recorded under Entry No. 182 of Mortgage Book 378, records of Pointe Coupee Parish, Louisiana.

No opinion is rendered by the undersigned as to the ownership of any oil, gas or other minerals or mineral rights in, on, under or otherwise affecting the hereinabove described property; nor as to any other oil, gas or mineral servitudes, leases or other matters pertaining to said property.

This opinion does not protect you from or against: (1) Any encumbrances, encroachments, boundary line disputes or other matters which may be reflected by an accurate current survey of the subject property; (2) Rights or claims of parties in possession of the subject property not shown by the public records; (3) Any lien, or right to a lien, for services, labor or materials heretofore or hereafter furnished, imposed by law and not shown by the public records; (4) The exercise of governmental zoning authority; (5) The exercise of inheritance rights of illegitimate children; (6) The results or consequences of any fraudulent statements or acts, or acts of forgery, in any way related to ownership of or title to the subject property; (7) Any claim which may be asserted by the State of Louisiana or any other governmental authority to any part of the subject property as being part of the bottom, bed and/or bank of a navigable body of water; (8) The results which may be occasioned by the involuntary or voluntary filing of a petition for bankruptcy by any current, former or future owner of the subject property; or (9) Any other matter which is not shown by the public records.

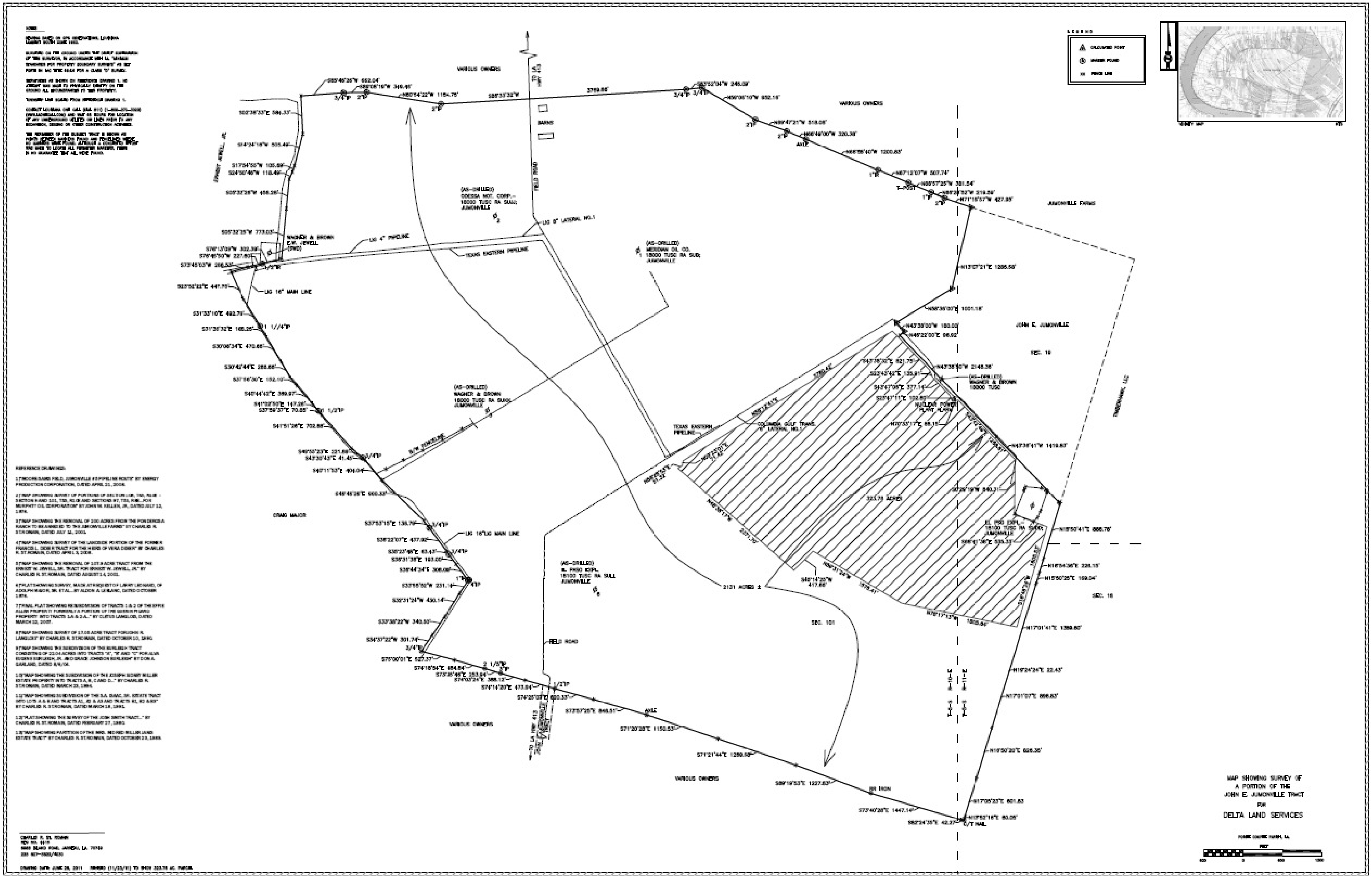
Should you have any questions or comments about this matter, please give me a call.

With kindest regards, I remain,

Yours truly,

Stephen P. Jewell

spj-docs\title opinion-prelimiary\delta-land-services-llc\jumonville (323.76 acres)


VARIOUS OWNERS
JUMONVILLE FARMS
JOHN E. JUMONVILLE
SEC. 19
SEC. 18
SEC. 101
CRAIG MAJOR
FIELD ROAD
BARNS
TEXAS EASTERN PIPELINE
2131 ACRES ±
323.73 ACRES
MAP SHOWING SURVEY OF
A PORTION OF THE
JOHN E. JUMONVILLE TRACT
FOR
DELTA LAND SERVICES

Attachment C

MITIGATION WORK PLAN FOR

PONDEROSA RANCH OF POINT COUPEE MITIGATION BANK

TABLE OF CONTENTS

ATTACHMENTS

Attachment MWP-C – MVN MCM Credit Assessment
Attachment MWP-D – Estimated Construction, Establishment and Long-Term Maintenance Funding Requirements Report.

Mitigation Work Plan

I. Objectives

A. Aquatic Resource Type and Functions Restored/Enhanced/Preserved

The objective of the Ponderosa Ranch of Pointe Coupee Mitigation Bank (Bank) is the re-establishment[1], rehabilitation[2], enhancement[3] and protection of bottomland hardwood and baldcypress swamp wetland ecosystems as defined by Louisiana Natural Heritage (LNH 2009) and Lester et al. (2005) within the alluvial floodplain of the Mississippi River (Figure 1 and Table 1).

Table 1. Baseline Condition and Proposed Mitigation Habitat and Type at Ponderosa Ranch of Pointe Coupee Mitigation Bank, Pointe Coupee Parish, Louisiana.

Baseline Condition	Proposed Mitigation Habitat and Type[1]	Acres
Wetland Black Willow Forest	Baldcypress Swamp Enhancement (B) (<24 feet NAVD)	2.1
Wetland Pasture	Baldcypress Swamp Rehabilitation (A) (<24 feet NAVD)	4.7
Wetland Tallow Forest	Baldcypress Swamp Rehabilitation (B) (<24 feet NAVD)	9.1
Nonwetland Pasture	Baldcypress Swamp Re-establishment (A) (<24 feet NAVD)	38.8
Wetland Pasture	Type 1 Bottomland Hardwood Rehabilitation (A) (24-25 feet NAVD)	1.3
Nonwetland Pasture	Type 1 Bottomland Hardwood Re-establishment (A) (24-25 feet NAVD)	47.1
Wetland Pasture	Type 2 and 3 Bottomland Hardwood Rehabilitation (A) (25-30 feet NAVD)	5.3
Nonwetland Pasture	Type 2 and 3 Bottomland Hardwood Re-establishment (A) (25-30 feet NAVD)	195.6
	Subtotal: Baldcypress Swamp Enhancement	*2.1*
	Subtotal: Baldcypress Swamp Restoration	*52.6*
	Subtotal: Bottomland Hardwood Restoration	*249.3*
	Total Mitigation Credit Acreage	**304.0**
Nonwetland Pasture	Wildlife Openings	7.6
Wetland Bottomland Hardwoods	Existing Forest	6.1
Water	Water	2.4
Nonwetland Pasture	Access Trails	2.0
Nonwetland Pasture	Afforested Hardwoods (>30 feet NAVD)	1.7
	Total Non-mitigation Acreage	**19.8**
	Total Conservation Servitude Acreage	**323.8**

[1] The suffix of A and B indicates pre-restoration land use. A indicates pasture and B indicates existing, grazed forestland.

[1] Re-establishment is defined in 33 CFR 332.2 as *the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.*

[2] Rehabilitated is defined in 33 CFR 332.2 as *the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.*

[3] Enhancement is defined in 33 CFR 332.2 as *the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.*

Features proposed as non-mitigation credit acreage within the Bank include wildlife openings and access trails. The purposes of these features are to facilitate monitoring/maintenance activities associated with the Bank establishment, long-term management and continued recreational use of the property. Other project objectives are to improve and protect the physical, chemical and biological functions of a forested wetland system as follows:

- Restoration and Protection of historic and self-sustaining surface hydrology within the 323.8-acre Bank through hydrological restoration activities such as backfilling artificial drainages;
- Restoration of native bottomland hardwood (249.3 acres) and baldcypress swamp (52.6 acres) communities through hydrology restoration and afforestation of native species;
- Enhancement of native baldcypress swamp (2.1 acres) through vegetative manipulation designed to improve species composition and improve habitat for migratory and resident bird species;
- Improvement of water quality by means of livestock removal and reduction of non-point source runoff through hydrological restoration activities;
- Restoration of forested habitat for aquatic fauna through afforestation of a diversity of indigenous species and control of invasive/noxious species;
- Afforestation and protection of nonforested land located next to larger, contiguous forested habitat for breeding birds in accordance with existing bird conservation plans;
- Protecting four existing bottomland hardwood (6.1 acres) stands through the elimination of livestock ranging and inclusion of these stands in the 323.8-acre perpetual conservation servitude;
- Ensuring long-term viability and sustainability of the Bank through active and adaptive management including, but not limited to, invasive species control, appropriate monitoring, and long-term maintenance;
- Establishing financial assurances through achievement of the long-term success criteria;
- Providing long-term protection utilizing a perpetual term conservation servitude on the 323.8-acre Bank and provide sufficient long-term funds to cover annual expenditures associated with maintenance and management of the Bank; and
- Implementing a project consistent with the strategies and goals to improve the watershed as identified in the False River Ecosystem Restoration (FRER) Project, Upper Terrebonne Basin (UTB) Water Quality Improvement Project and Barataria-Terrebonne National Estuary Program (BTNEP) Comprehensive Conservation Plan.

B. Watershed and Ecological Contributions

The Bank is in the upper reach of the Barataria-Terrebonne estuary complex. The Barataria-Terrebonne National Estuary Program (BTNEP) was established in 1990 by the State of Louisiana and the Environmental Protection Agency (EPA) for the purpose of preserving, protecting and restoring this estuary complex (Figure 2). BTNEP in conjunction with local stakeholders developed the Comprehensive Conservation and Management Plan (CCMP) which outlined 12 goals to accomplish this objective. The restoration of the Bank is in solidarity with three of these goals which are 1) preservation and restoration of wetlands, 2) support for diverse, natural biological communities; 3) to develop and meet water quality standards which protect estuary resources; and 4) to work in conjunction with natural processes (Moore and River 1996).

The Bank is located between the present channel of the Mississippi River and False River, an oxbow lake which was once the main course of the Mississippi River. This area is locally known as the Island. The entirety of this land area drains into False River and is located in the USGS eight-digit HUC 08070300 which is the Lower Grand Watershed (Figures 3 and 4). The Lower Grand watershed is the focus of the UTB Water Quality Improvement Project, whose goals are to protect water resources and improve quality of impaired waters within the watershed for fish and wildlife, drinking water, and aesthetics. One of the goals of this initiative is to complete the FRER Study and Project authorized by Section 206 of the 1996 Water Resources Development Act (WRDA). According to the premise for this study, False River has undergone a decline in water quality as a result of several land use changes over the past 50 years. Large amounts of forestland within the watershed was converted to cropland and other agricultural uses followed by the construction of over 50 miles of drainage ditches from adjacent pastureland. This resulted in siltation, nutrient loading, and pollutants entering into False River from adjacent agricultural lands (Earth Consulting Group 2007, Earth Consulting Group et al. 2009; Chustz 2012). Of particular concern are the high levels of sediment deposition into False River (Jones 2012, LDNR 2012 and Thibaut 2012).

Restoration of forested habitat on the Island through programs such a mitigation banking have been recognized as beneficial components to achieve the goals of the FRER Project (Chustz 2012). LDNR and LDWF (2012[2]) purported that the establishment of the Bank would further address the sedimentation issues associated with runoff from agricultural lands. Elimination of the artificial drains within the Bank described in Section VI of this Mitigation Work Plan (MWP) is consistent with the mid-term goal of the FRER Project. This goal calls for action to reduce siltation and turbidity in False River through hydromodification of the drainage network (LDNR and LDWF 2012[2]). The restoration and protection of forested wetlands within the Bank will provide additional wetland functions and values that are currently not realized. Improved water quality will be achieved by ceasing hay/livestock production, re-establishing natural drainage patterns, and afforestation. The increase in water quality will result from removing the cattle and eliminating the agricultural practices utilized for producing grazing forage and hay. Agricultural practices such as seasonal tilling for mechanical vegetation control and the application of herbicides, pesticides and fertilizers will no

longer be necessary and will reduce potential, non-point source pollution (e.g., soil erosion and chemical runoff).

The long-term goals of the FRER Project are to develop and implement a watershed management strategy, establish best management practices (BMPs), develop a watershed conservation plan and investigate the acquisition of conservation easements (LDNR and LDWF 2012[2]). A House Concurrent Resolution (No. 123) was presented to the Louisiana Legislature during the 2012 session to establish the False River Watershed Council to implement a comprehensive watershed conservation plan for the False River Watershed (Thibaut 2012). The long-term protection of the Bank with a perpetual conservation servitude, as described in Section X.A of this MBI and Section III of this MWP, is consistent with the long-term strategies of acquiring conservation easements identified by LDNR and LDWF (2012)[2].

The restoration and afforestation of the Bank near larger, extant tracts of bottomland hardwoods will provide benefit to various species of wildlife such as Nearctic-Neotropical migrant birds and threatened species such as the Louisiana black bear (*Ursus americanus luteolus*) (Natural Resources Conservation Service [NRCS] 2005). Approximately 107 bird species, excluding wading birds, nest regularly within the MAV with 70 species utilizing bottomland hardwoods as primary habitat (Twedt et al 1999[1]). The Partners in Flight (PIF) Bird Conservation Plan (BCP) for the MAV recommends increasing the interior area of forested fragments to increase habitat for forest-dwelling (silvicolous) bird species (Twedt et al. 1999[1]). Twedt et al. (1999[2]) list fourteen forest breeding species as species of high concern. Three of these species are highest priority species for conservation. These are Swainson's warbler (*Limnothlypis swainsonii)*, Cerulean warbler (*Dendroica creulea*) and swallow-tailed kites (*Elanoides forficatus*). The planting of densely-spaced seedlings and the management of such species to provide a diversity of structure in areas within largely forested landscapes is an identified strategy to encourage the recruitment of breeding populations of scrub-dwelling (thamnic) and silvicolous bird species (Twedt et al. 1999[1]; Twedt et al. 2010). The macrohabitat and microhabitat of the Bank (i.e. ridges and swales; meander scrolls, ridge top depressions) are important to bird conservation because of the high priority forest breeding bird species of importance that are dependent on forested wetlands but vary in microhabitat requirements. The ridge habitats are vital to the three highest priority breeding bird species while the swales are important in providing habitat for migratory waterfowl, wading birds and shorebirds thus integrating all facets of the PIFBCP for the MAV (Twedt et al 1999[1]). Promotion of reforestation efforts and the protection of habitat with conservation easements is a documented strategy for bird conservation on private lands in the Barataria and Terrebonne basins (Wiedenfield et al 1996). Using the spatial analysis model developed by Twedt et al. (2006), the Bank is in a high priority area for the restoration of bird habitat (Figure 5).

The Bank is located in an area designated as a primary conservation zone for the Louisiana black bear (Figure 5). The Bank is located east of extant bottomland hardwoods that are designated as critical habitat by the US Fish and Wildlife Service (USFWS) for this species. The area is approximately six miles east of this federally-

designated zone[4]. The afforestation of existing agricultural lands within the Bank will provide for larger contiguous forested habitat located near extant forests within the critical habitat area. This would potentially provide for the establishment of a larger forested corridor and potential habitat for bears which may disperse from other forested areas. Corridor conservation and restoration is identified as a strategy to facilitate wildlife and plant migration in response to transitions anticipated with predicted climate change (National Fish, Wildlife and Plants Climate Adaptation Strategy Management Team [*Strategy*] 2012). In addition to the importance to migratory bird species and the Louisiana black bear, the MMNS (2005) purports that old-growth bottomland hardwood forests are critical habitat for 11 of the 18 species of bats known to the Southeast. Southern myotis (*Myotis austroriparius*) and Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) prefer large, hollow trees in mature bottomland hardwood and swamp habitats, respectively (LMRJV 2007; Taylor 2006). The unique topography of the Bank offers the opportunity to provide habitat with a diversity of hydrological regimes which are critical to the life cycles of many species of reptiles and amphibians. The large size of the Bank in proximity to a larger, extant forested wetland tract also coincides with the large home ranges that most of these species require (Dundee and Rossman 1989; LMRJV 2007).

The USFWS and EPA have expressed support for the mitigation project for its potential to provide wetland functions and suitable wildlife habitat[5]. The LDNR has expressed support for the Bank as it is in line with the goals of the FRER Project[6]. The restoration[7] of bottomland hardwood and baldcypress forest within the 323.8-acre Bank will provide additional wetland functions and values that are not currently realized under existing conditions and land use. Localized and downstream water quality will increase by removing livestock from the Bank; afforestation[8] of the Bank with native wetland tree species; and increasing surface-water retention time for vegetative nutrient uptake and sedimentation through hydrologic restoration.

II. Site Selection

The primary factors considered during site selection were the unique landscape positions of the site, the documented presence of hydric soils, the evidence of the existence of forested wetlands prior to conversion, the high likelihood of achieving full forest restoration, the compatibility with other watershed initiatives and conservation plans, and the restoration's compatibility with existing and anticipated surrounding land uses (Figure 6). The land area adjacent to the Bank is comprised of pasture land, agricultural land, forested wetlands; an

[4] Federal Register Vol. 74, No. 45 titled *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat of the Louisiana Black Bear (Ursus americanus luteolus)* promulgated as a Final Rule by the US Fish and Wildlife Service on March 10, 2009

[5] Correspondence to CEMVN from the USFWS Louisiana Ecological Services Office dated February 8, 2012, and EPA Region 6 Wetland Section dated February 21, 2012.

[6] Correspondence to CEMVN from the LDNR Office of Coastal Management, Atchafalaya Basin Program dated February 14, 2012.

[7] Restoration is defined in 33 CFR 332.2 as the *manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.*

[8] The Society of American Foresters (SAF 2011) defines afforestation as "the establishment of a forest or stand in an area where the preceding vegetation or land use was not forest whereas reforestation is the re-establishment of forest cover either naturally (by natural seeding, coppice, or root suckers) or artificially (by direct seeding or planting) —*note* reforestation usually maintains the same forest type and is done promptly after the previous stand or forest was removed —*synonym* regeneration".

existing 248.5-acre Permittee Responsible Mitigation (PRM) area associated with Department of Army (DA) Permit MVN-2010-1148-CY and a 27.6-acre PRM area associated with DA Permit MVN-2011-03015. These PRM projects are on the Owner's property and are managed by the Sponsor.

The construction work required to develop the Bank is routine and feasible. The construction work will consist of 1) site preparation, 2) afforestation and 3) filling artificial drains. The relatively low landscape position and the documented presence of hydric soils imply that minimal soil work will be required for successful restoration of wetland hydrology and forested wetlands. The existence of bottomland hardwoods adjacent to the Bank indicates a high potential for successful restoration.

III. Site Protection Instrument

The Owner will burden the Property with a perpetual conservation servitude in accordance with Louisiana law, La. R.S. 9:1272 per Section X. A. of this MBI. The conservation servitude shall encumber all acreage identified as the Bank and record it in the Mortgage and Conveyances Records Office of Pointe Coupee Parish. Mississippi River Trust, a not-for-profit conservation group, is anticipated to be the entity that will hold the servitude. This servitude will be comparable to two existing conservation servitudes associated with the PRM areas described in Section II of this MWP which total 276.1 acres and are held by Mississippi River Trust (Figure 6). The execution of the conservation servitude on the Bank will result in continuous acreage under perpetual conservation servitude in the amount to 599.9 acres.

IV. Baseline Information

The site is located within the 29,555-square mile Mississippi Delta Cotton and Feed Grains Region Land Resource Region (LRR O) of the 38,865-square mile Southern Mississippi River Alluvium Major Land Resource Area (MLRA 131A), the Mississippi Alluvial Plain Level 3 Ecoregion and Southern Holocene Meander Belts Level 4 Ecoregion (NRCS 2006, Omernik 1987, EPA 2003). The area is located in 838,000-acre Atchafalaya Trace State Heritage Area as designated by the Louisiana Legislature (R.S. 24:1221-1225). The region was designated as a National Heritage Area by the National Park Service (NPS) in 2006 due to its concentration of significant natural, scenic, cultural, historic and recreational resources (Atchafalaya National Heritage Area 2012). The Bank is located within the upper portion of the 6,616-square mile Barataria-Terrebonne estuary complex that was designated as a National Estuary in 1990 (Moore and Rivers 1996).

The property was historically a bottomland hardwood and baldcypress wetland forest typical of those associated with ridge and swale formation within the alluvial plain of the lower Mississippi River. Prior to its conversion to agricultural uses, the Bank was located in an area known as "Grand Swamp" (Figure 7). The CEMVN issued a preliminary jurisdictional determination on the property dated June 26, 2011 with an identification number of MVN-2011-00999-SC (MWP Attachment B). Areas proposed

for re-establishment are designated as nonwetlands and areas proposed for rehabilitation and enhancements are designated as wetlands. The site elevations range from >30 feet North American Vertical Datum (NAVD) to <24 feet NAVD (Figure 8).

A. Land Use

1. Historical Land Use

The Bank is located within the approximately 24 million-acre lower Mississippi Alluvial Valley (MAV). Prior to European settlement and colonization, the MAV consisted of mostly contiguous bottomland hardwoods and swamps. Today, approximately 20% of the original forested acreage remains in fragmented blocks which, on average, total 158 acres in size (Twedt et al 1991). Much of the deforestation stemmed from the need to convert these lands to agricultural uses. The rate of deforestation increased in the 20th Century due to major flood control projects (i.e. major levee construction), advancements in land clearing technology and spikes in the price of agricultural commodities such as soybeans during the 1960s and 1970s (Lower Mississippi River Joint Venture [LMRJV] 2007). The Coastal Wetlands Planning, Protection, and Restoration Act Task Force (CWPPRA 1993) estimates that the historic wetland loss within the Barataria-Terrebonne estuary complex from 1932 to 1990 was 446,971 acres with 45% of this loss occurring in the Terrebonne Basin.

Examination of historic aerial photography (Figures 9 through 16) reveals that the site was a functional wetland forest as recently as 1952. By 1966, portions of the property were cleared, with efforts focusing on the ridges. Significant changes in land use occurred in the early 1970's when a drainage canal associated with the Gross Tete Watershed Management Project (M-1 Canal) was excavated on the Island by the United States Soil Conservation Service (SCS) (LDNR and LDWF 2012[1]). The M-1 Canal traversed the Island and smaller artificial drains were constructed within the Bank and on surrounding property for the purpose of draining the site into the M-1 Canal. These smaller drains were constructed in the bottoms of naturally occurring swales in order to move water into the M-1 Canal via culverts installed within the spoil depositional area of the Canal. The construction of these drainage features made it feasible to clear the remainder of the Bank by 1972. By 1983, 72% of the Island was cleared and in crop production. Since that time, much of the cultivated cropland was replaced by pasture (LDRN and LDWF 2012[1]). Much of this shift to pasture was the persistent wetness of these areas even with drainage improvements. SCS (1982) describes the site soils as well suited to pasture and woodland but only moderately suitable for cropland due to wetness and poor tilth. The soils are described in Section IV.B of this MWP.

2. Current Land Use

Currently, the Bank site is managed for livestock production with a land use that is improved pasture with small patches of forest occurring throughout the property (Figure 17 and Table 1). The site is juxtaposed with a larger block of forestland along the east boundary. This forest has been managed for timber production but was never

cleared for agricultural uses and therefore represents the likely pre-converted condition of the Bank (i.e. reference wetland). This forested area is designated in the National Wetland Inventory (NWI) by the USFWS as Palustrine Forested Wetlands (PFO) per Cowardin classification system (Cowardin et al. 1979; USFWS 2011; Figure 18). The Sponsor evaluated six locations within this adjacent forested wetland area for soils, hydrology and vegetation in order to establish reference information. These data sites were established on ridges, transitional areas and swales with elevations ranging from 29.3 feet NAVD to 22.6 feet NAVD (Figures 19 and 20). The soils, hydrology and vegetation data was collected in accordance with USACE 2010. The soils are described in Section IV.B of this MWP; the hydrology is described in Section IV.C of this MWP; and the vegetation is described in Section IV.D.1 of this MWP.

B. Soils

The soils within the Bank and the overall 2,131-acre Jumonville property in which it is located is mapped by the NRCS (2011[1]) as Dundee-Alligator complex (De), undulating and Water (Figure 21). The Alligator soils are estimated at 40% of this map unit and are mapped as hydric by the NRCS while Dundee soils are estimated to be 50% of this map unit and are considered nonhydric (2012[1]). The remaining 10% are associated soil types such as Commerce, Sharkey and Tunica soils (SCS 1982, NRCS 2011[2]). The Dundee soil was established in 1949 in Tunica County, Mississippi but was updated in 2004 by the NRCS. Currently, the Dundee soils are described having a water table at 3.5 feet (42 inches) to 6 feet (72 inches) when under drainage. This condition is considered the dominant condition for Dundee soils since much of it is found in *extensively* drained row-cropped farmland and thus warrants its exclusion from the hydric soils list (NRCS 2012[2]).

The Sponsor conducted field verifications for hydric soils. Thirty two (32) locations were sampled through the entirety of the approximate 2,000-acre property for the purposes of a wetland determination described in Section IV of this MWP. Of the 32 data points, six (6) were located within the boundaries of the Bank. The soil descriptions recorded at these locations showed that the soils were hydric in accordance with the Atlantic and Gulf Coastal Plain (AGCP) Regional Supplement (USACE 2010). Indicators recorded included Depleted Matrices (F3), Depleted below Dark Surface (A11) and Iron-Manganese Masses (F12). The elevations where the data was collected ranged from a high of 28.9 feet NAVD to a low of 21.4 feet NAVD (Figure 21).

The soils in the reference wetland area were analyzed by the Sponsor at four of the six data points located in the reference forested wetland area described in Section IV.A.2 of this MWP. The four sampled soils contained sufficient hydric indicators in accordance with the AGCP Regional Supplement (USACE 2010) and were considered hydric. These indicators included a Depleted Matrix (F3) at all data points and a Depleted below Dark Surface (A11) was observed at two data points located on a ridge. The two data points where no soil observations were made were located in a swale and inundated with 8 to 14 inches of water. These soils were assumed hydric as they were inundated and had a hydrophytic plant community either dominated with obligate (OBL) and

facultative wetland (FACW) species or had a low prevalence index (2 or less). These points were located on ridges, transitional areas and swales ranging in elevations from 28.9 feet NAVD to 21.4 feet NAVD (Figure 20).

NRCS soil scientists conducted an onsite soil investigation within the Bank at six (6) locations at elevations ranging from 27.7 feet NAVD to 29.9 feet NAVD (Figure 21). Of the six soil profiles sampled, five profiles had hydric indicators and were considered to be hydric soils. The nonhydric point is located at one of the highest elevations of 29.9 feet NAVD. However, one of the hydric locations was at an elevation of 29.9 feet NAVD. Of the five soil profiles sampled which were hydric, three were characteristic of Dundee and two characteristic of Alligator clays. The one nonhydric soil was characteristic of a Dundee soil.

To supplement on-site soil investigations, the Sponsor installed three indicators of reduction in soils (IRIS) tubes[9] at various locations within the Bank (Figure 22). These tubes were placed on the apex of a ridge (30.2 feet NAVD), on the upper elevation of a transitional area (28.0 feet NAVD) and in a swale (22.9 feet NAVD). The soil textures on the ridge were clay and silty clay while those of the transition and swale location consisted of clay within the upper 16 inches. The tubes were left in place for 67 days which exceeds the recommended minimum of 14 days. Jenkinson et al. (2002) noted on sites in west central Indiana a two-week to eight-week lag time between a soil horizon becoming saturated and lowest redox potential (E_H) being attained. The IRIS tubes were extracted on June 7, 2012 and analyzed for the amount of Ferrhydrite (Fe) paint removed from the tube in the upper soil profile (i.e. depleted) using the grid developed by the IRIS tube vendor. The IRIS tubes in swales and on sideslopes had an average of 34% Fe paint removal in the upper 6 inches of the soil profile and a 38% removal rate in the upper 4 inches of the profile. The IRIS tube located on the ridge had an average Fe Paint removal rate of 16% in the upper 6 inches of the soil profile and 15% in the upper 4 inches. The cumulative rainfall during the 67-day period in which the IRIS tubes were in place was 6.20 inches which is 2.19 inches below the cumulative rainfall average for April and May[10]. The NTCHS (2007) specifies that 30% Fe paint depletion within a 6-inch continuous zone within the upper 12 inches of the soil profile indicates a 100% confidence of soil reduction. Based upon the on-site field verifications and the IRIS tube data, soil reduction is currently occurring within the upper 12 inches of the soil profiles with the exception of the highest elevations which are $\geq$30 feet NAVD.

Topographic positioning could influence the hydric nature of the Dundee-like soils on the ridges. At these positions, the surface is flatter, the runoff potential is low and rainfall is more likely to infiltrate the soil. This infiltration causes argillic horizons to form which have very low permeability (Richardson et al 2001). The NRCS (2012[2]) describes an argillic horizon in Dundee from 5 to 29 inches. Fine layered horizons can also create a large capillary fringe above the level of the water table which is the top of the phreatic zone (Ritter 1986). The thickness of the capillary fringe is determined by the

[9] The IRIS tube was obtained commercially from InMass Technologies (www.iristube.com)
[10] April and May 2012 rainfall from Port Allen, Louisiana data obtained from the Louisiana State University Southern Regional Climate Center.

height above rise. This is calculated by Hc= 0.15/r where r is the pore size diameter in centimeters. Soil textures finer than sand or sandy loams typically have a pore diameter of 0.005 centimeters or smaller. This pore size would equate to an Hc of 30 centimeters or 12 inches. Tiner (1999) describes that the capillary fringe in clay soils may form wetlands on significant slopes in regions with high precipitation. Mausbach (1992) defines the capillary fringe thickness for various soil textures. Very fine sandy loams range from 6.2 to 10.2 inches, sandy clay loams/loams range from 8.0 to 12.0 inches; clay loams range from 10.0 to 14.0 inches, clays range from 10.0 to 16.0 inches, silty clays range from 16.0 to 24.0 inches; and silt/silty clay loams range from 14.0 to 20.0 inches. These soil textures are described in various horizons of the Alligator and Dundee per the NRCS (2012[2]), SCS (1982) and Schumacher et al. (1988). NRCS personnel described Dundee-like profiles as having silt to loamy textures and Alligator-like profiles having silty-clay loams to clay textures. A Dundee soil under nondrained conditions is described as having a water table which may be within 1.5 feet (18 inches) of the soil surface. A capillary fringe in the range of 10 to 24 inches above this water table level would result in saturation beginning at the soil surface or at a depth of 6 inches below the soil surface. An Alligator soil is described as having a water table which may be within 6 inches of the soil surface. The high water tables for these two soil series are purported to occur in December through April (SCS 1982). Even as the water table falls, the water in the capillary fringes persists longer as it is under tension (Ritter 1986).

C. Hydrology

Hydrology on the Bank is primarily from a combination of rainfall and water table levels associated with high water events on the nearby Mississippi River. Cumulative annual precipitation is 62.13 inches per year with the highest rainfall occurring in the months of December, January, April and July and the lowest rainfall occurring in October. Nearby river gage data show the Mississippi River's average stage was 29.0 feet NAVD since March 2009 with a high of 53.3 feet (May 18, 2011) and a low of 7.5 feet (July 12, 2012). Although the Bank no longer receives surface flows from the Mississippi River due to the mainline levee, it is likely that the river levels and discharges affect the subsurface hydrology of the Bank through hydrostatic pressure. At high flows, water can move through underlying courser-textured sediments which may elevate the subsurface water tables and provide a hydrological connection in riparian floodplain systems (Ritter 1986; Cabezas et al [2011]). This is especially common on fine-textured features located in close proximity to course-textured features such as point bars and natural levees (Gee 2012). These events are known to this area as evidenced by the numerous artesian wells that have been installed at the base of the protected side of the western mainline levee along LA Hwy 415. These wells are to prevent saturation of the soils beneath the levee which are associated with these subsurface flows. In studies of tree recruitment, Gee (2012) noted positive correlation between rises in river stages and rises in nearby subsurface water levels on ridges, swales and flats within forested, floodplain sites in the MAV. These observations were made on the White River National Wildlife Refuge (NWR) in Arkansas County, Arkansas; and Bayou Cocodrie NWR and Red River Wildlife Management Area (WMA) in Concordia Parish, Louisiana. During the studies Gee (2012) observed that high river stages kept the water table within the

rooting zone across all topographic features during the late growing season when higher stress would be expected from temperature and drought conditions.

An analysis of the hydrology indicators at the six data point locations described in Section IV.B of this MWP show that there are areas within the property that currently meet the hydrology criteria described in the AGCP Regional Supplement (USACE 2010). Of the six data points collected, three contained positive wetland indicators. These were Surface Water (A1), High Water Table (A2), Saturation (A3), Water Marks (B1), Inundation Visible on Aerial Imagery (B7), >2% Oxidized Rhizospheres on Living Roots (C3), Moss Trim Lines (B16) and FAC-neutral test (D5). An analysis of water marks throughout the project site reveal that inundation reaches a level of 24 feet NAVD even with the artificial drainage system in place.

It appears that saturation in these soils is from both endosaturation from precipitation and episaturation from ground water and associated capillary lifting due to the capillary fringes described in Section IV.B of this MWP (Tiner 1999). The USACE (1987) purports that saturation will always be above the water table level due to the capillary fringe.

1. Historical Drainage Patterns

The Bank possesses a unique, ridge and swale topography shaped by the historical meandering of the Mississippi River (Hodges 1998). Leopold et al (1964) identified these fluvial geomorphological features as *meander scrolls*. Meander scrolls form from the meandering course of a river within a floodplain when point bars are reworked into low ridges and troughs (i.e. swales or chutes). The swales are distinctly wetter than ridges but ridges differ distinctly from natural levees in that the soils trend from course-textured soils below to fine-textured soils above (Lindo and Richardson 2001). In areas subject to high precipitation such as Pointe Coupee Parish, these swales typically do not have well defined natural drainage outlets and exist as depressional wetlands (Collins and Kuehl 2001; Schumacher et al. 1988).

2. Existing Drainage Patterns

The unique topography and meander scroll features found on the Bank can influence site hydrology. The ridges in this system are typically convergent in nature and tend to accumulate water and infiltration within the swale features which maximizes ground water recharge. The result is typically higher water tables with hydric zones extending further upslope especially in areas subject to high precipitation (Schoeneberger et al. 1998; Richardson et al. 2001). Jenkinson et al (2002) noted water table patterns in an undulating site with randomly arranged swales in a forested till plain site in western central Indiana which had seasonal high water tables. The wetter and more poorly drained sites were located at higher elevations and better drained sites at low elevations. Jenkinson et al (2002) theorized that the wetter sites had dense, impervious layers which perched water and caused it to move laterally toward the hill slopes. At that point subsurface water moved down the slope and discharged as a hill side seep and

accumulated in the low positioned swales. Brinson et al. 1995 quantify meander scroll macrotopography as having the highest functional value (1.0) within the riverine Hydrogeomorphic Model (HGM) for its ability to detain long-term surface water for long durations. This result is replenished soil moisture, sediment and nutrient removal, habitat for pool-dependent species, and vegetation composition maintenance.

During the conversion from a forested wetland to agricultural uses, hydrologic modifications such as ditching, culverts and channelization of natural swales were implemented for efficiently moving water off the site and into the M-1 Canal. These ditches and drains remain in place to move water off-site to limit the horizontal, vertical and temporal extent of ponding and saturation of the site. These on-site ditches and drains carry water into the M-1 Discharge Canal. The Canal carries these waters to Discharge Bayou and eventually into False River (Figures 23 through 29). The thalweg of the M-1 Canal at this location is approximately 10 feet below the average natural elevation of the Bank at its deepest part and is approximately 60 feet in width between the tops of bank. The Canal has a left descending bank slope of 2.4:1 and has a cross-sectional area of approximately 395.7 square feet[11] (Figure 30).

The M-1 Canal does affect the hydrology of the site when functioning *in combination* with the on-site drainages that are perpendicular to the Canal. Once these drainages are eliminated and restored to grade, the continued existence of the Canal will not have a negative influence on the hydrology of the restored site. The Canal will not draw water from the adjacent sites through soil percolation (i.e. subsurface flow) because of the low permeability and poorly drained nature of the soils within this area which the Canal traverses (NRCS 2012[2]). The finer textured nature of the soils on site reduces the hydraulic conductivity which reduces the rate of ground water movement in accordance with Darcy's Law, a quantitative description of ground water movement[12] (Ritter 1986; Richardson et al. 2001).

SCS (1982) describes Dundee soils as having a permeability of 0.6 to 2.0 inches per hour in the upper four inches of the soil profile, 0.2 to 0.6 inches per hour from 4 to 38 inches; and 0.6 to 2.0 inches per hour below 38 inches. Alligator soils have permeability ranges of 0.2 to 0.6 inches per hour in the upper 8 inches of the soil profile and less than 0.06 inches per hour from 8 to 73 inches. These physical characteristics would limit the Canal's subsurface zone of influence (NRCS 2007). When the Canal was constructed, the spoil was side cast on the east side of the Canal and a road was constructed on top of this area. This has resulted in further compaction of the soils adjacent to the Canal which would further lower the permeability of the soils adjacent to the Canal and the ability of water to move laterally through the adjacent subsurface. The system of secondary drainages had to be established in order to drain water, both surface and subsurface, into the Canal and subsequently offsite. The artificial drains constructed in the Bank were designed to carry water from the site and into the Canal. With the proposed hydrology restoration, these drains will be eliminated so there will be no

[11] The dimensions were measured by the Sponsor on March 23, 2012.
[12] Darcy's Law is expressed as and expressed as Q = K (dH/dL) where Q is groundwater movement, K is hydraulic conductivity, dH is hydraulic head and dL is length.

conduit for water to effectively drain into the Canal from the site. Additionally, an approximate 50-foot zone exists between the bank of the Canal and the boundary of the Bank which will serve as a buffer to any potential zone of influence the Canal may have at the Bank boundary.

D. Vegetation

1. Historical Plant Community

Historically, the site was forested and dominated by species similar to extant forested areas that are adjacent to the Bank. Species data was collected from the six data points within the reference forested wetland area described in Section IV.A.2 of this MWP. These adjacent forests are dominated by facultative (FAC) and FACW species on the ridges; FAC, FACW and OBL species in transitional areas; and FACW and OBL species in the swales[13]. The ridges consist of tree species such as water oak (*Quercus nigra*), sugarberry (*Celtis laevigata*), American elm (*Ulmus americana*), deciduous holly (*Ilex decidua*) and box elder (*Acer negundo*)[14]. The swales are dominated by baldcypress, green ash (*Fraxinus pennsylvanica*), Nuttall oak (*Quercus texana*), Drummond red maple (*Acer rubrum drummondii*) and planer tree (*Planera aquatica*). Transitional areas are dominated by sweetgum, sugarberry, green ash and persimmon (*Diospyros virginiana*). The area is mapped as a Dundee-Alligator complex (NRCS 20111, Soil Conservation Service [SCS] 1982). The NRCS (2012[2]) describes the Alligator soils in wooded conditions as being in bottomland hardwoods or swamps with species such as baldcypress (*Taxodium distichum*), ash (*Fraxinus* spp.), tupelo gum (*Nyssa biflora*), Drummond red maple, oaks (*Quercus* spp.), hickories (*Carya* spp.), sweetgum (*Liquidambar styraciflua*) and eastern cottonwood (*Populus deltoides*). The Dundee soils under wooded conditions are bottomland hardwoods dominated by cherrybark oak (*Quercus pagoda*), eastern cottonwood, sweetgum and water oak.

2. Existing Plant Community

Existing vegetation within the pasture areas on-site is typical of managed pastureland and is managed for and dominated primarily with bermudagrass (*Cynodon dactylon*), a facultative upland (FACU) species. Other species occurring within the pasture are spinyfruit buttercup (*Ranunculus muricatus*), southern dewberry (*Rubus trivialis*), Carolina geranium (*Geranium carolinianum*), and curly dock (*Rumex crispus*). Vegetation in existing wetland areas, whether forested or emergent pasture, was comprised of species such as smartweed (*Polygonum punctatum*) and common spikerush (*Eleocharis smallii*). Many of the artificial drains were colonized by giant cutgrass (*Zizaniopsis miliacea*) and common rush (*Juncus effuses*) and in some areas the banks of these drains are lined with tree species dominated by black willow (*Salix nigra*) and Chinese tallowtree (*Triadica sebifera*).

[13] The indicators utilized from data points collected are from USFWS (1988) as the data was collected prior to June 1, 2012. All plant indicators utilized after June 1, 2012 will be in accordance with the 2012 National Wetland Plant List (Lichvar and Kartesz 2009) in accordance with the final notice *Publication of the Final National Wetland Plant List* published in the Federal Register on May 9, 2012 (Vol. 77 No. 90).
[14] All plant scientific nomenclature is from NRCS (2011[2])

The small-forested inclusions within the property are bottomland hardwood stands (6.1 acres) and Chinese tallowtree/black willow stands (11.3 acres). The bottomland hardwoods are comprised of sugarberry, sweetgum, American elm, sweet pecan (*Carya illinoensis*), box elder, Nuttall oak and water oak. The Chinese tallowtree/black willow stands are dominated by either Chinese tallowtree or black willow in excess of 98% of the stand densities. These forested tracts are currently open to ranging by livestock so browsing pressure is evident within these stands (Figure 17). A quantitative summary of the overstory composition of these forested areas within the Bank is located in Tables 2, 3 and 4.

Table 2. Bottomland Hardwood Stand Summary[1] at Ponderosa Ranch of Pointe Coupee Mitigation Bank, Pointe Coupee Parish, Louisiana.

Species	SPA[2]	BA[3]	QMD[4]	Relative Density[5]	Relative Dominance[6]
Celtis laevigata	134.4	75.34	10.1	54.5%	35.1%
Liquidambar styraciflua	30.7	59.56	18.9	12.5%	27.7%
Ulmus americana	25.6	17.26	11.1	10.4%	8.0%
Acer negundo	22.5	6.48	7.3	9.1%	3.0%
Quercus texana	7.6	13.18	17.8	3.1%	6.1%
Acer rubrum	6.0	1.71	7.2	2.4%	0.8%
Platanus occidentalis	5.5	17.14	24.0	2.2%	8.0%
Quercus nigra	5.5	10.74	19.0	2.2%	5.0%
Taxodium distichum	4.5	10.66	20.7	1.8%	5.0%
Carya aquatica	2.9	0.36	4.7	1.2%	0.2%
Carya illinoinensis	1.5	2.29	17.0	0.6%	1.1%
TOTALS	**246.7**	**214.72**	**14.4**	**100.0%**	**100.0%**

[1] Based on weighted average of inventory from a 0.1-acre circular plots located within three bottomland hardwood stands
[2] SPA = stems per acre of species ≥2.6 inches diameter at breast height (dbh)
[3] BA = the square footage of basal area on a per acre basis
[4] QMD= quadratic mean diameter (inches)
[5] Percent Density is based on SPA
[6] Percent Dominance is based on BA

Table 3. Chinese Tallowtree Stand Summary[1] at Ponderosa Ranch of Pointe Coupee Mitigation Bank, Pointe Coupee Parish, Louisiana.

Species	SPA[2]	BA[3]	QMD[4]	Relative Density[5]	Relative Dominance[6]
Triadica sebifera	490.0	127.35	6.9	98.0%	98.9%
Acer rubrum	10.0	1.36	5.0	2.0%	1.1%
TOTALS	**500.0**	**128.71**	**6.0**	**100.0%**	**100.0%**

[1] Based on inventory of a 0.1-acre circular plots located within the stand
[2] SPA = stems per acre of species ≥2.6 inches diameter at breast height (dbh)
[3] BA = the square footage of basal area on a per acre basis
[4] QMD= quadratic mean diameter (inches)
[5] Percent Density is based on SPA
[6] Percent Dominance is based on BA

Table 4. Black Willow Stand Summary[1] at Ponderosa Ranch of Pointe Coupee Mitigation Bank, Pointe Coupee Parish, Louisiana.

Species	SPA[2]	BA[3]	QMD[4]	Relative Density[5]	Relative Dominance[6]
Salix nigra	410.0	137.93	7.9	82.0%	95.0%
Triadica sebifera	90.0	7.20	3.8	18.0%	5.0%
TOTALS	**500.0**	**145.13**	**5.8**	**100.0%**	**100.0%**

[1] Based on inventory of a 0.1-acre circular plots located within the stand
[2] SPA = stems per acre of species ≥2.6 inches diameter at breast height (dbh.)
[3] BA = the square footage of basal area on a per acre basis
[4] QMD= quadratic mean diameter (inches)
[5] Percent Density is based on SPA
[6] Percent Dominance is based on BA

V. Bank Credits

A. Credit Determination

Credits in the Bank were determined using the CEMVN Modified Charleston Method (MVN MCM). The result of the model is included as Attachment MWP-C. In addition to this assessment methodology, CEMVN may determine mitigation requirements using best professional judgment applying those ratios included in tabular form in Section XI.C of this MBI.

B. Schedule of Credit Availability

The CEMVN has expressed concerns that sufficient hydrology can be restored to the degree that the entirety of the restored acreage will convert to naturally sustainable wetlands. This is based on the complex topography and geomorphology and the lack of control over broader hydrological influence described in Section IV of this MWP. These features are described in Section IV.C.2 of this MWP. To reduce the risk level and uncertainty associated with the restoration, the release schedule reflects a 50% reduction in each of the first three releases from the standard release schedule of 30%, 20%, and 20%, respectively. These releases would be deferred to the fourth standard release of 20% therefore; this release could be as much as 55%. The amount of the final release would remain at the standard 10%[15].

Upon submittal of all appropriate documentation by the Sponsor, and subsequent approval by the IRT, the CEMVN will release credits for use by the Sponsor according to the following schedule:

1. Fifteen percent (15%) of total anticipated project credits will be available for debiting upon implementation of the work necessary to restore site topography and wetland hydrology as outlined in Section VI of this MWP.

2. An additional ten percent (10%) of total anticipated credits will be available for debiting upon planting of the Bank.

[15] Correspondence to Sponsor from the CEMVN dated October 4, 2012.

3. An additional ten percent (10%) of the total anticipated credits would be released upon successfully completing the initial success criteria (Section VIII. A of this MWP)

4. An additional fifty-five percent (55%) of the total anticipated credits would be released upon successfully completing the interim success criteria (Section VIII. B of this MWP).

5. The remaining ten percent (10%) of the total anticipated credits would be released once the Long-term Success Criteria (Section VIII. C of this MWP) are met.

VI. Description of Work to be Performed

The proposed mitigation work plan involves the cessation of livestock operations, restoration of surface hydrology, afforestation, and implementing effective short and long-term management strategies. The implementation of the Bank will restore 304.0 acres of bottomland hardwood and baldcypress swamp habitat as described by LNH (2009) and Lester et al. (2005) (Figure 1 and Table 1). Areas below 24 feet NAVD will be restored as baldcypress swamp. Areas between 24 and 25 feet NAVD will be restored as an overcup-water hickory (Type 1) bottomland hardwood described by LNH (2009) while areas between 25 and 30 feet NAVD will be restored as a hackberry-American elm-green ash (Type 2) and sweetgum-water oak (Type 3) bottomland hardwoods.

All livestock will be removed from the Bank prior to site preparation activities in late summer and early fall. Fencing within the interior of Bank will be removed and new fencing will be constructed between the boundary of the Bank and adjacent pasture where livestock grazing will continue as a land use. This fence will consist of four strand barbed-wire fencing with the top strand approximately 54 inches above ground level. Site preparation activities within existing pasture areas will be accomplished by preparing the site as needed through herbicide treatments, cultivation, and ripping the soil at equidistant intervals to a depth of approximately 18 inches (Allen et al. 2001). Site preparation efforts within the 11.3 acres of existing Chinese tallowtree and black willow stands will consist of herbicide treatment and subsequent removal of invasive and noxious tree species through mechanized clearing, cutting, shredding or combination thereof. In stands dominated by Chinese tallowtree, all existing forest cover will be removed and the area replanted. The prescription for black willow-dominated stands is to thin approximately half of the black willow stems with an emphasis on smaller diameter stems and leave the larger diameter stems in place as these are currently serving as important habitats for Nearctic-Neotropical bird species. Following thinning activities, the stand will be interplanted with desirable hardwood and baldcypress species.

Afforestation activities will include the planting of native tree species during the first planting season (December 15, 2013 through March 15, 2014) following site preparation. The species selected are appropriate to the site in terms of moisture regime, competition, nutrient, etc.; and upwards of ten species shall be represented in the planting assemblage to

insure adequate species richness (Twedt and Best 2004). The species selection is based upon species noted in the adjacent reference wetlands described in Section IV.A.2 of this MWP and literature review (LNH 2009, Lester et al. 2005, Burns and Honkala 1990). The proposed species are all OBL, FACW and FAC per the 2012 National Wetland Plant List (Lichvar and Kartesz 2009) with the exception of three species designated as FACU that will be included in small quantities. These FACU species are sweet pecan, live oak (*Quercus virginiana*), and red mulberry (*Morus rubra*). These are included as they are native, appropriate to the anticipated restored site conditions and add considerable habitat value.

The afforestation effort will integrate the utilization of fast-growing soft mast species with slower-growing hard mast species to allow for greater vertical structural diversity which is necessary habitat for forest breeding birds of high conservation importance (Twedt et al. 1999[1]). Bottomland hardwood afforestation is typically established by planting a predominance of late-successional hard mast seedlings in fields fully exposed to direct sunlight. Under these conditions, late successional species exhibit reduced height growth, delayed canopy closure, increased competition from allelopathic grasses, increased rodent and rabbit depredation, and delayed colonization by silvicolous birds and wildlife (NRCS 2005; Myster and Picket 1992, Savage et al. 1996; Reader 1997). These fields tend to remain as grass and forb habitat for a period of up to ten years following the planting of seedlings. Although grassland bird species are present in these habitats, the densities of these species remain low under these conditions and mortality exceeds reproduction (i.e. sink habitat). However, when a more scrub-shrub type habitat is present next to an adjacent mature forest, more thamnic species are present with high nest success rates making this a source habitat. Additionally, the presence of this type of habitat next to adjacent mature forests increase the nest success of silvicolous bird species such as Acadian flycatchers (*Empidonax virescens*) closer to the edges. Therefore, these species are not forced deeper into the forest interior (NRCS 2005). The integration of rapid growth early successional species mimics early natural succession and provide natural habitat and partial cover for late successional species which exhibit increased growth in partial cover and dappled sunlight exposure (Twedt and Portwood 2003, Gardiner and Hodges 1998). The early successional species create biotic and abiotic environmental conditions that promote seedling emergence and survival of late successional species (Harper et al. 1965, Twedt and Portwood 2003).

An optimal method of accomplishing this is to integrate fast-growing species such as eastern cottonwood and American sycamore (*Platanus occidentalis*) into the planting regime. On the Bank, this will be incorporated into areas being restored to Type 2 and 3 bottomland hardwoods (25 to 30 feet NAVD). After several growing seasons, the eastern cottonwood stems would begin to naturally decline to release the hardwoods into the dominant crown class. As natural mortality occurs within these trees the remnants will likely provide for snags as well as incorporation of course woody debris into the site which is a an important component for various wetland functions such as nutrient cycling (Brinson et al. 1995). The increased leaf litter anticipated from the eastern cottonwood and American sycamore will positively contribute to various wetland functions, soil conditioning, and habitat for various species of amphibians and reptiles (Brinson et al. 1995, NRCS 2003).

Initial planting densities will be 538 stems per acre (Table 5). Seedlings will be mixed upon planting so that areas are not comprised of a single species (Twedt and Best 2004). A zone approximately 300 feet in width along the current forestland-pasture interface will remain unplanted due to the anticipated natural recruitment of wood species within this area. Twedt (2004) documented that natural regeneration within this zone is sufficient without incorporating artificial regeneration methods.

Table 5. Planting Composition of Wetland Credit Acres at Ponderosa Ranch of Pointe Coupee Mitigation Bank, Pointe Coupee Parish, Louisiana.

Baldcypress Swamp Species			
Common Name	**Scientific Name**	**Indicator Status[1]**	**Composition[2]**
baldcypress	*Taxodium distichum*	OBL	60-70%
swamp tupelo	*Nyssa biflora*	OBL	10-20%
buttonbush	*Cephalanthus occidentalis*	OBL	<10%
Drummond red maple	*Acer rubrum* var. *drummondii*	OBL[3]	<10%
mayhaw	*Crataegus opaca*	OBL	<10%
Carolina ash	*Fraxinus caroliniana*	OBL	<10%
pumpkin ash	*Fraxinus profunda*	OBL	<10%
overcup oak	*Quercus lyrata*	OBL	<10%
Nuttall oak	*Quercus texana*	FACW	<5%
Type 1 Bottomland Hardwood Hard Mast Species (approximately 40 to 70%)			
Common Name	**Scientific Name**	**Indicator Status[2]**	**Composition**
overcup oak	*Quercus lyrata*	OBL	10-20%
Nuttall oak	*Quercus texana*	FACW	10-20%
willow oak	*Quercus phellos*	FACW	10-20%
Delta post oak	*Quercus similis*	FACW	10-20%
water hickory	*Carya aquatica*	OBL	10-20%
Type 1 Bottomland Hardwood Soft Mast Species (approximately 30 to 60%)			
Common Name	**Scientific Name**	**Indicator Status**	**Composition**
Drummond red maple	*Acer rubrum var. drummondii*	OBL[3]	≤10%
buttonbush	*Cephalanthus occidentalis*	OBL	≤10%
mayhaw	*Crataegus opaca*	OBL	≤10%
green ash	*Fraxinus pennsylvanica*	FACW	≤10%
baldcypress	*Taxodium distichum*	OBL	≤10%
Type 2 and 3 Bottomland Hardwood Hard Mast Species (approximately 40-70%)			
Common Name	**Scientific Name**	**Indicator Status**	**Composition**
cow oak	*Quercus michauxii*	FACW	10-20%
cherrybark oak	*Quercus pagoda*	FACW	10-20%
willow oak	*Quercus phellos*	FACW	10-20%
Nuttall oak	*Quercus texana*	FACW	10-20%
water oak	*Quercus nigra*	FAC	≤10%
delta post oak	*Quercus similis*	FACW	≤10%
sweet pecan	*Carya illinoinensis*	FACU[4]	≤5%
Type 2 and 3 Bottomland Hardwood Soft Mast Species (approximately 30-60%)			
Common Name	**Scientific Name**	**Indicator Status**	**Composition**
sugarberry	*Celtis laevigata*	FACW	≤10%
common persimmon	*Diospyros virginiana*	FAC	≤10%
green ash	*Fraxinus pennsylvanica*	FACW	≤10%
sweetgum	*Liquidambar styraciflua*	FAC	≤10%
American sycamore	*Platanus occidentalis*	FACW	≤10%
eastern cottonwood	*Populus deltoides*	FAC	≤10%
American elm	*Ulmus americana*	FAC	≤10%
red mulberry	*Morus rubra*	FACU[4]	≤5%

[1] Indicator status from 2012 National Wetland Plant List (Lichvar and Kortesz 2009)
[2] Exact species and quantities to be determined by seedling availability from commercial sources providing localized ecotype seedlings.
[3] Indicator status from 1988 National Wetland Plant List, Region 2
[4] Upland species which are native to the site and provide habitat value

The remaining 18.1 acres will consist of non-credit features (i.e. afforested hardwoods >30 feet NAVD, existing forest, open water, access trails and maintained wildlife openings), which will be protected by a conservation servitude (Figure 1 and Table 1). The existing 1.7 acres of pasture which is above 30-feet NAVD will be afforested with bottomland hardwood species similar to the Type 2 and 3 Bottomland Hardwood but at a rate of 604 stems per acre. Although these areas may develop as wetlands after restoration activities occur, the soil and hydrology data collected and described in Section IV.B of this MWP did not indicate hydric soils or sufficient reducing conditions to provide a positive indications that wetland conditions may occur in these areas. However, the Sponsor will continue to monitor this area post restoration to document the development of this area in terms of soils and hydrology under restored conditions. This 1.7-acre planting is described in Table 6.

Table 6. Planting Composition of Nonhydric Acres >30 Feet NAVD at Ponderosa Ranch of Pointe Coupee Mitigation Bank, Pointe Coupee Parish, Louisiana.

>30 Feet NAVD Bottomland Hardwood Hard Mast Species (approximately 40-70%)			
Common Name	**Scientific Name**	**Indicator Status**	**Composition**
water oak	*Quercus nigra*	FAC	10-20%
cherrybark oak	*Quercus pagoda*	FACW	10-20%
willow oak	*Quercus phellos*	FACW	10-20%
cow oak	*Quercus michauxii*	FACW	10-20%
Nuttall oak	*Quercus texana*	FACW	10-20%
sweet pecan	*Carya illinoinensis*	FACU	<10%
water oak	*Quercus nigra*	FAC	<10%
live oak	*Quercus virginiana*	FACU	<3%
>30 Feet NAVD Bottomland Hardwood Soft Mast Species (approximately 30-60%)			
Common Name	**Scientific Name**	**Indicator Status**	**Composition**
eastern cottonwood	Populus deltoides	FAC	50%
sweetgum	*Liquidambar styraciflua*	FAC	<10%
red mulberry[5]	*Morus rubra*	FACU	<10%
American elm	*Ulmus americana*	FAC	<10%

Total wildlife opening acreage is 7.6 acres and is comprised of two separate designated areas (4.4 acres and 3.2 acres) for use as open space or planted as food plots for wildlife. Wildlife openings will be prepared by light disking for seedbed preparation, seeding by a small drill or seed spreader, and harrowing for seed coverage. This will be accomplished utilizing a small tractor or all-terrain vehicle (ATV). The current locations of the wildlife openings do not result in major breaks or fragmentation. The types and amounts of any soil nutrients to be added will be specific to each wildlife opening and will be determined by professional recommendations based on yearly soil tests. Tests are typically conducted by the Louisiana State University (LSU) Soil Lab. Access trails will facilitate monitoring/maintenance activities and specified permissive recreational activities (e.g., hunting). Any access trails within the Bank will exist at natural grade and follow the tops of ridges to the extent practical so as to not interfere with natural hydrological flow. These trails will remain as unimproved access trails and not exceed 30-feet in width.

The 6.1 acres of existing bottomland hardwoods stands described in Section IV.D.2 of this MWP will remain and be protected by the conservation servitude. These stands will serve to benefit the restoration acreage as hydric inclusions. Management of the site will be

limited to invasive species control through methods such as girdling stems and application of appropriate herbicide. The 2.4-acre open water area will remain as open water habitat which will provide habitat for various forms of aquatic fauna.

Approximately 41,313 linear feet of drainage ditches designed to carry surface water off site will be returned to grade utilizing approximately 17,214 cubic yards of *in situ* earthen fill material to restore natural swale conditions (Figures 31 through 37). The culverts allowing the drainage of these ditches into the M-1 Canal will be removed and replaced with adjustable drop pipes as an early adaptive measure to encourage early seedling survival (Figures 34 through 35). In addition, an elevated, unimproved road located parallel with the west boundary will be degraded and returned to natural grade and a parallel artificial drain will be filled to grade. This will provide a more natural hydrologic connection to the forested wetland swales on the neighboring property which are described in Section IV.A.2 of this MWP. The drop pipes will be used to avoid early stress and facilitate favorable height growth of the seedlings in the Baldcypress Swamp areas below 24 feet NAVD. These structures will be adjusted to a set vertical height to allow for the drainage of excess ponded water anticipated from the filling of the artificial drains and the removal of the culverts at the M-1 Canal interface. As the seedlings develop vertically, the crest of the structures will be adjusted to a higher vertical elevation to allow for inundation of greater depths within this habitat. Within three years following project construction, the Sponsor will remove the structures and backfill the interface so that these areas will hydrologically function as depressional swales described in Section IV.A.2 of this MWP and no further structural management will be required.

Hydrology restoration will increase the retention time of surface water and saturation, which will reduce nonpoint source runoff and increase water quality through increased nutrient uptake by vegetation. This is consistent with one of the mid-term actions identified by LDNR and LDWF 2012[2] for implementation of the FRER Project. The Sponsor anticipates no long-term structural management requirements needed to assure sustained hydrology. The re-establishment of the natural forested vegetation will reduce the runoff, especially from ridges and upper portions of transitional areas. The establishment of a tree canopy intercepts rainfall and reduces its kinetic energy before falling to the soil surface. The result is a greater reduction in runoff and erosion and an increase in soil infiltration (Richardson et al. 2001). Increased infiltration on soils with argillic horizons, as is common to Dundee soils, increases saturation and subsequent reduction in the soil surface as is observed on ridges in the reference wetland area described in Section IV.A.2 of this MWP. This increased infiltration will often result in a discharge of water around the upperslope or remain as stored moisture. These increased saturation zones on the upper slopes following heavy precipitation events typically provide for the genesis of hydric soils (Richardson et al. 2001).

Re-establishment of a forested vegetative cover will increase the amount of organic material that is incorporated into the soil and thus fuel more reduction and the formation of redoximorphic features. Organic carbon is critical to soil reduction and formation of low chroma colors which are nonexistent if organic carbon is absent. The increased amount of organic carbon is anticipated from increased leaf and wood litter (Collins and Kuehl 2001).

Once these drainage modifications are rendered ineffective through restoration efforts, a more natural, historic water regime will be restored. The establishment of the Bank will be compatible with adjacent land uses given that much of the neighboring property is existing, forested wetland described in Section IV.A.2 of this MWP. The remaining adjacent land use is pasture (which is under the management of the Owner) and two contiguous PRM projects which are being implemented and managed by the Sponsor.

VII. Maintenance Plan

The Sponsor will use all prudent efforts, physical, chemical, or mechanical, to eliminate existing undesirable/exotic vegetation present such as Chinese tallowtree on the site during site preparation activities. Following completion of construction activities, the restoration and enhancement site will be monitored and inspected annually for invasive species colonization and to determine if adaptive management measures need to be considered such as replanting. The Sponsor anticipates that invasive species control measures will be implemented as-needed through stand improvement[16] activities over the first 5 years following construction and then again at Year 10 and Year 15. The Sponsor will continue to monitor the Bank through annual inspections to document the following:

- the effectiveness of control efforts
- the extent and degree of invasive species present
- the extent and degree of any herbivory damage
- the condition and functionality of any hydrological structures

Following such monitoring, invasive species and herbivore control will be implemented, as necessary and hydrological structures will be replaced if determined necessary. The boundaries will be inspected and it is anticipated that boundary maintenance, such as signage or marking paint, will take place around Year 10 and Year 15. A chronological outline of these events is found in the *Establishment Costs for Ponderosa Ranch of Pointe Coupee* within Attachment MWP-D.

VIII. Performance Standards

A. Initial Success Criteria

1. Hydrology: Ground surface elevations must be conducive to the establishment and support of hydrophytic vegetation, and re-establishment and maintenance of hydric soil characteristics. To that end, all alterations of the natural topography (ditching, spoil banks, land leveling, bedding, fire breaks, etc.) that have affected the duration and extent of surface water have been removed or otherwise rendered ineffective in accordance with this MWP.

[16] The Society of American Foresters (SAF 2011) defines stand improvement as "an intermediate treatment made to improve the composition, structure, condition, health, and growth of even- or uneven-aged stands". This term is to be used in place of the obsolete term "timber stand improvement (tsi)".

2. Vegetation: A minimum of 250 planted seedlings per acre must survive through the end of the second spring following the planting (i.e., Year 1). Those surviving seedlings must be representative both in species composition and percentage identified in this MWP. This criterion will apply to initial plantings, as well as any subsequent replanting that may be needed to meet this requirement.

B. Interim Success Criteria

1. Hydrology: The drop-pipe structures will have been removed as described in Section VI of this MWP. By Year 5, four years following attainment of the Year 1 survivorship criteria and two years following removal of the drop-pipe structures, site hydrology will be restored such that the Property meets the wetland criterion as described in the 1987 Manual and the Atlantic and Gulf Coastal Regional Supplement (USACE 1987, USACE 2010). Data demonstrating that wetland hydrology has been re-established is to be collected by the Sponsor and submitted to CEMVN in the monitoring report for the interim success criteria.

2. Vegetation and Vegetative Plantings

a. For a given planting, a minimum of 250 seedlings/saplings per acre must be present at the end of the fourth year (i.e., Year 5) following successful attainment of the one-year survivorship criteria. Trees established through natural recruitment may be included in this tally; however, no less than 125 hard mast-producing seedlings per acre must be present in the bottomland hardwood areas while no less than 125 baldcypress seedlings per acre must be present in the baldcypress swamp areas. Surviving hard mast seedlings must be representative of the species composition and percentage identified in this MWP. Exotic/invasive species may not be included in this tally.

b. By Year 5, four years following successful attainment of the one-year survivorship criteria, the Bank and the perimeter will be virtually free (approximately 5% or less on an acre-by-acre basis) of exotic/invasive vegetation.

c. Developing plant community must exhibit characteristics and diversity indicative of a viable native forested wetland community commensurate with stand age and site conditions by Year 5. Achievement of wetland vegetation dominance is defined as a vegetation community where more than 50% of all dominant species are facultative ("FAC") or wetter, excluding FAC- plants, using "routine delineation methods" as described in the 1987 Manual.

C. Long-term Success Criteria

1. Forest canopy coverage exceeds eighty percent (80%) of forested land mass as measured by an approved method. Forest canopy species abundance and composition is consistent with the restoration goals identified in the restoration plan and credit assessment methodologies.

2. When forest canopy coverage exceeds eighty percent (80%), the Bank will be essentially void of exotic/invasive vegetation (all seed-producing trees removed from Bank, including the perimeter, and less than 1% of the understory on an acre per acre basis). An active treatment program will continue as part of the long-term maintenance program.

3. The Sponsor will complete the stand improvement activities described in Section VII of this MWP. If thinning to maintain or enhance the ecological value of the Bank is determined necessary by the IRT at this time, the Sponsor/Steward will develop a thinning plan in coordination with the IRT. Thinning operations will be performed by the Sponsor/Steward.

4. The long-term maintenance fund shall be fully funded in the amount of $48,600 in accordance with Section X.C. of this MWP.

IX. Monitoring and Reporting Protocols

A. Monitoring

The Sponsor agrees to perform all work necessary to monitor the Bank to demonstrate compliance with the success criteria established in this MBI. The Sponsor will monitor the Bank in the spring of each monitoring year using the following guidelines:

1. Permanent Monitoring Stations

a. Immediately following initial planting of the Bank, the Sponsor will randomly establish a permanent circular monitoring station for every 20 acres on the Bank. Each station will have a minimum area of 1/20th acre (radius = 26 feet). Stations will be identified with a permanent marker (e.g., an 8-foot PVC pipe anchored with a metal T post at plot center) and GPS coordinates will be recorded. A map depicting the location of the monitoring stations and a listing of the station coordinates is to be provided to the CEMVN. All planted seedlings/saplings falling within each monitoring station will be marked with a numbered tag uniquely identifying that stem. The Sponsor will document the number, species, height and diameters of tagged stems within each monitoring station immediately following initial planting.

b. Surveys of the permanent monitoring stations will occur immediately following the planting of the Bank to establish baseline and then in Years 1, 3, and 5. However, if monitoring for any given year determines that the Bank is not progressing as expected, monitoring will continue on an annual basis until the Bank successfully meets or exceeds established milestones. After achieving the interim success criteria, monitoring will occur every 3 years until an average canopy coverage of 80% is obtained. If thinning is required after successfully achieving the long-term success criteria, the site will be surveyed prior to and following the first thinning operation following plantings.

c. The survey of the permanent monitoring stations will collect data to evaluate the survival rate, number, species, and growth rates (average heights and diameter) of the planted vegetation. In addition to planted seedlings, surveys will include the number by

species of volunteering trees, shrubs and woody vines. Surveys will also collect information regarding other colonizing plant species, the wetland plant status (scaled from obligate (OBL) to upland (UPL)) of each and the number by species of exotic/noxious.

2. Transects. The Sponsor shall establish transects along planted rows to be used to determine overall survivorship of planted seedlings. Transect shall make up approximately 3% of the total number of rows and arranged so that a representative sample of the entire track is obtained. The beginning and ending points of each transect shall be marked with a permanent marker (e.g., an 8-foot PVC pipe anchored with a metal T post) and GPS coordinates recorded. Transects will be surveyed to determine the number, by species, of planted seedlings within 60 days of planting to establish baseline information. Transects will be surveyed through successfully meeting the interim success criteria. Initial and interim transect surveys shall record the number by species of living seedlings, describe the general condition of the seedlings, and note size of any failed planting areas and provide possible reasons for planting failures.

3. The Sponsor will collect data on the hydrologic conditions of the Bank as necessary to document evidence of wetland hydrology. Documentation will include descriptions of the upper 12 inches of the soil profile sufficient to demonstrate hydric properties. This data shall be a combination of qualitative measures such as indicators described by the USACE (1987 and 2010) and quantitative measures such as piezometers, monitoring wells or other methods.

4. The Sponsor will complete a comprehensive floristic survey of the Bank as part of the monitoring requirements to document attainment of the long-term success criteria.

B. Reporting Protocols

1. As-Built Report. An as-built report will be submitted to the CEMVN within 60 days following completion of all the work required to restore or enhance special aquatic sites. The as-built report will describe in detail the work performed and provide a list of species planted and the number of each species. No deviation from the MWP may occur without prior approval from the IRT. The as-built report will include a discussion of the coordination with the IRT members and a description of and reasons for any approved deviation. The as-built report shall provide:

a. A survey showing finished grades and plantings.

b. Survey data collected from the permanent monitoring stations and the transects.

2. Monitoring Reports. The Sponsor will submit reports documenting the monitoring efforts at the Bank to the CEMVN by July 1 of the year such monitoring occurs. Besides monitoring results for that monitoring year, reports will include a financial assurance report documenting withdrawals and deposits. The monitoring reports will follow the guidelines outlined here:

a. The monitoring report will include data sufficient for comparison to the performance standards found in Section V of this MBI. The Sponsor should also include discussion of all activities which took place at the Bank. At a minimum, monitoring reports also include the following:

1) Digital images taken from ground level at each monitoring station and from elevated positions throughout the Bank to document overall conditions,

2) A description of the general condition of the seedlings, including the number and species of surviving seedlings in each monitoring station, the tag number and a discussion of likely causes for mortality,

3) A description of vegetative communities developing at each monitoring station,

4) A description of the generalized degree and distribution of exotic/invasive species and whether they are seed bearing trees or seedlings,

5) Identify measures to eradicate exotic/invasive species and document results of these efforts,

6) A general discussion of hydrologic conditions at monitoring stations, (documentation will include a wetland delineation approved by the CEMVN if previously determined to be a non-wetland),

7) A description of the condition of any applicable hydrology altering features (culverts, ditches, plugs, etc.), and

8) A description of wildlife usage at each monitoring station, including any herbivory problems if applicable.

b. Financial Information. The Sponsor will provide copies of deposits and account statements for all financial assurance accounts associated with the Bank and for the Long-term Maintenance and Protection Fund. If any escrowed funds were utilized, the Sponsor will include a narrative describing that use and supporting documentation (e.g., receipts).

c. Ledgers

The Sponsor will utilize the Regional Internet Bank Information Tracking System (RIBITS) as a ledger to show all transactions. The Sponsor will input the following information: transaction date, permittee name, credits/acres sold and DA permit number. No other reporting measures are required.

X. Long-term Management Plan

A. Long-term Management Needs

To ensure the long-term sustainability of the resource, the Sponsor will monitor the site, control invasive species, and maintain boundaries. Invasive species control will include control of nuisance wildlife species such as feral hogs (*Sus scrofa*). The forest will be managed, in consultation and with written IRT approval, to maintain or increase the biological, chemical and physical wetland functions this site and to achieve and maintain the desired forest conditions as described by LMJV (2007) which will provide forested habitat capable of supporting populations for priority wildlife species. No long-term structural management will be required because there are no water control structures to maintain.

B. Annual Cost Estimates for These Needs

The annual cost of long-term management is estimated to be $1,456.97 from Year 16 to Year 50. This amounts to an annual cost of $2,301.98 when adjusted for inflation over a 35-year period. Attachment MWP-D is a description of the necessary work and an itemized cost to perform the work for long-term management and protection of the Bank.

C. Long-Term Maintenance and Protection Funding Mechanism

To ensure that sufficient funds are available to provide for the perpetual maintenance and protection of the Bank, the Sponsor is establishing the "Long-Term Maintenance and Protection" escrow account. This account will be administered by a federally-insured depository that is "well-capitalized" or "adequately-capitalized" as defined in Section 38 of the Federal Deposit Insurance Act. The account will be incrementally funded by depositing a minimum of $175.90 into the account per credit/acres sold at the time of credit sale until the account is fully funded in the amount of $48,600 by the time 90% of the total number of credits are sold or upon successful achievement of the Long-Term Success Criteria, whichever occurs first. Any accrued interest shall be used in the operation, maintenance or other purpose that directly benefits the Bank. Only the interest accumulated maybe withdrawn for this purpose. The principal shall not be used and shall remain as part of the Bank's assets to ensure that sufficient funds are available should perpetual maintenance responsibilities be assumed by a third party. The Sponsor or Long-term Stewart may withdraw the accumulated interest only with written approval from the CEMVN and only to be used to maintain the Bank. The Sponsor shall provide copies of depository account statements to the CEMVN upon request and in their monitoring reports.

XI. Financial Assurances

A. Financial Assurances Purpose

Sufficient funds to ensure satisfactory completion of the work described in this MWP and the Adaptive Management Plan (Section XII of this MWP) will be provided. The Sponsor is establishing the Construction and Establishment (C&E) financial assurance to assure sufficient funds are available to perform work required to construct

and maintain the project through Year 15 or canopy coverage equal to or greater than 80%.

B. Estimate of Funds Required

The estimate of funds required is $141,427.94 for Construction and $97,239.04 for Establishment. Attachment MWP-D is an estimate of work and third-party costs requirements for constructing and establishment of the Bank. These costs are based on recent established contractor costs and current tax rates for Pointe Coupee Parish.

C. Funding Mechanism

To fund this account, the Sponsor proposes to establish the Ponderosa Ranch of Pointe Coupee Mitigation Bank C&E Fund in the form of an escrow account in the amount identified in Section XI.B of this MWP.

XII. Adaptive Management Plan

An adaptive management strategy, contingency, and remedial responsibilities shall be in place, and will be implemented in the event monitoring reveals that certain success criteria have not been met. In the event of a deficiency, the Sponsor shall provide a notice to the CEMVN. This notice shall include an explanation for the deficiency, and will outline specific practices and measures that will guide decisions for revising compensatory mitigation plans if needed.

The wildlife openings and the perimeters of these areas will be monitoring and managed to control noxious, invasive or exotic species. As indicated in the monitoring plan, the Sponsor will inspect the wildlife openings for the encroachment or establishment of such species. When discovered, invasive, exotic species will be controlled and eradicated. The boundary between each opening and the adjacent forested wetland will be monitored to assess any encroachment of species planted within food plots, as identified in Section VI of this MWP, into forested areas. Any such encroachment will be controlled through appropriate measures such as herbicide treatment, manual removal, etc. If any wildlife opening is abandoned or monitoring reveals that the wildlife openings are facilitating noxious, invasive or exotic species colonization, the Sponsor will control those species and plant the wildlife openings with the appropriate bottomland hardwood or swamp species.

A. Seedling Survivorship

1. If performance standards are not met as specified in Section VIII of this MWP, the Sponsor shall take appropriate actions, as recommended by the CEMVN, to address the causes of mortality and shall replace seedlings of the appropriate species during the following planting season. Replanting, monitoring and reporting, as

previously described, shall occur as needed to achieve and document the required survival rate.

2. If the performance standard is not met after three unsuccessful attempts, the CEMVN will convene a meeting with the Sponsor to decide if replanting should continue. Should the CEMVN determine that achieving the required survival rate would not be likely; the Sponsor shall be required to provide replacement mitigation for the increment of value that did not accrue within the unsuccessful areas within one year of this decision.

B. Contingencies for Hydrology

If wetland hydrology is not documented by Year 5, the Sponsor shall specify in the monitoring report those areas where attention is needed. The CEMVN may require the Sponsor to conduct adaptive management measures in order to obtain adequate hydrology. With approval of the CEMVN, the Sponsor would establish a means of increasing the amount of available water to the site.

XIII. Other Information

The district engineer may require additional information as necessary to determine the appropriateness, feasibility, and practicability of the compensatory mitigation project.

XIV. Citations

Allen, J.A., Keeland, B.D., Stanturf, J.A., Clewell, A.F., and H.E. Kennedy (2001 [rev. 2004]). *A guide to bottomland hardwood restoration*: US Geological Survey, Biological Resources Division Information and Technology Report USGS/BRD/ITR-2000-0011. USDA Forest Service, Southern Forest Research Station, General Technical Report SRS-40, 132 pp.

Atchafalaya National Heritage Area (2012) *The Atchafalaya National Heritage Area* (Website). Available URL: http://www.atchafalaya.org. Accessed July 20, 2012.

Brinson, M. M., Hauer, F. R., Lee, L. C., Nutter, W. L., Rheinhardt, R. D., Smith, R. D., and Whigham, D. (1995). "A guidebook for application of hydrogeomorphic assessments to riverine wetlands," Technical Report WRP-DE-11, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS. NTIS No. AD A308 365.

Burns, Russell M., and Barbara H. Honkala (1990) *Silvics of North America: 1. Conifers; 2. Hardwoods*. Agricultural Handbook 654. U.S. Department of Agriculture, Forest Service, Washington, DC. Vol. 2., 877 pages.

Cabezas, A., M. Gonzalez-Sanchís, B. Gallardo, and F.A. Comín (2011) Using Continuous Surface Water Level and Temperature Data to Characterize Hydrological Connectivity in Riparian Wetlands. *Environmental Monitoring and Assessment*. DOI 10.1007/s10661-011-1934-9.

Chustz, S. (2012) *False River Ecosystem Restoration Status Update and Alternative Action Plan* [PowerPoint® Slide]. Presentation at a public stakeholder meeting in New Roads, Louisiana, June 22, 2012. Retrieved from the Louisiana Department of Natural Resource's Website http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=924 Accessed July 15, 2012.

Coastal Wetlands Planning, Protection and Restoration Act (1993) *Louisiana Coastal Wetlands Restoration Plan*. Main Report and Environmental Impact Statement prepared by the Louisiana Coastal Wetlands Conservation and Restoration Task Force.

Collins, M.E. and R.J. Kuehl (2001) Organic Matter Accumulation and Organic Soils In Richardson, J.L and M.J. Vepraskas (eds.) Chapter 6, *Wetland Soils. Genesis, Hydrology, Landscapes and Classification.* pp. 137-162. Boca Raton, London, New York: CRC Press.

Dundee, H.A. and D.A. Rossman (1989) *The Amphibians and Reptiles of Louisiana*. Louisiana State University Press, Baton Rouge, Louisiana.

Earth Consulting Group, Inc. (2007) *Atchafalaya East Watershed Initiative, Iberville, Pointe Coupee, and West Baton Rouge Parishes, Louisiana*. A report prepared for the Louisiana Department of Natural Resources Atchafalaya Basin Program, February 28, 2007.

Earth Consulting Group, Providence, Taylor Engineering, Stanley Consultants, G.E.C., Inc. (2009) *Atchafalaya East Watershed (Upper Terrebonne Basin) Phase 2A, Detailed Problem Identification and Technical Evaluation;* Iberville Parish, Pointe Coupee Parish and West Baton Rouge Parish, Final Report.

Environmental Protection Agency (2003) *Level III ecoregions of the continental United States* (revision of Omernik 1987): Corvallis, Oregon, U.S. Environmental Protection Agency - National Health and Environmental Effects Research Laboratory, Map M-1, various scales.

Gardiner, E.S. and J.D. Hodges (1998) Growth and biomass distribution of cherry bark oak (*Quercus pagoda* Raf.) seedlings as influences by light availability. *Forest Ecology and Management* 108: 127-134.

Gee, H. (2012). *The Effects of Hydrologic Modifications on Floodplain Forest Tree Recruitment and Growth in the Mississippi River Alluvial Valley, USA*. A

Dissertation Submitted to the Louisiana State University A&M College, May 2012.

Harper, J.L., J.T. Williams, and G.R. Sagar (1965) The heterogeneity of soils surfaces and its role in determining the establishment of plants from seed. *Journal of Ecology*. 53. 273-286.

Hodges, J.D. (1998) Minor Alluvial Floodplains. In Chapter 13, *Southern Forested Wetlands Ecology and Management*. pp. 325-341. Boca Raton, Boston, New York, Washington, London: CRC Press.

Jenkinson, B.J., D.P. Franzmeir, W.C. Lynn (2002) Soil Hydrology on an End Moraine and a Dissected Till Plain in West-Central Indiana. *Soil Science Society of America Journal*, Volume 66: 1367-1376.

Jones, T. L. (2012) False River Plan Revitalization Plan Unveiled. *The Advocate*: Saturday Edition Newspaper. Baton Rouge, Louisiana. Website http://theadvocate.com/home/2970343-125/false-river-revitalization-plan-unveiled#main-photo-caption . Accessed 2 June 2012.

Leopold, L.B., M.G. Wolman, and J.P. Miller (1964) *Fluvial Processes in Geomorphology*. San Francisco, CA. W.H. Freeman.

Lester G., S. Sorenson, P. Faulkner, C. Reid, and I. Maxit (2005) *Louisiana Comprehensive Wildlife Strategy (Wildlife Action Plan)*. Louisiana Department of Wildlife and Fisheries.

Lichvar, R.W. and J.T. Kartesz (2009) *North American Digital Flora: National Wetland Plant List*, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC.

Lindo, D.L. and J.L. Richardson (2001) Hydric Soils and Wetlands in Riverine Systems In Richardson, J.L and M.J. Vepraskas (eds.) Chapter 8, *Wetland Soils. Genesis, Hydrology, Landscapes and Classification.* pp. 283-299. Boca Raton, London, New York: CRC Press.

Louisiana Department of Natural Resources (2012) *False River Ecosystem Restoration Status Update and Alternative Action Plan* [PowerPoint Slides]. Public presentation of the False River Aquatic Resources Ecosystem Restoration Project, May 30, 2012. Retrieved from Louisiana Department of Natural Resources Website. http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=924 on June 2, 2012.

Louisiana Department of Natural Resources and Louisiana Wildlife and Fisheries (2012)[1] *False River Watershed*. Interim Report on HCR 168 of 2011 Regular Legislative Session, March 2012.

Louisiana Department of Natural Resources and Louisiana Wildlife and Fisheries (2012)[2] *Draft Alternative Action Plan, False River Ecosystem Restoration Project*. Final Draft Report on HCR 168 of 2011 Regular Legislative Session, May 2012.

Louisiana Natural Heritage Program (2009) *The Natural Communities of Louisiana.* Louisiana Department of Wildlife and Fisheries.

Lower Mississippi Valley Joint Venture (2007) *Restoration, Management and Monitoring of Forest Resources in the Mississippi Alluvial Valley: Recommendations for Enhancing Wildlife Habitat, Version 5.2* (FINAL REPORT). Wilson, R., K. Ribbeck, S. King, and D. Twedt. Lower Mississippi Valley Joint Venture Forest Resource Conservation Working Group

Mausbach, M.J. (1992) Soil Survey Interpretation in Wet Soils In *Proceedings of the 8th International Soil Correlation Meeting: Characterization, Classification, and Utilization of Wet Soils*. J.M. Kimble (eds). USDA Soil Conservation Service, National Soil Survey Center, Lincoln, NE. pp 172-178.

Mississippi Museum of Natural Science (2005) *Mississippi's Comprehensive Wildlife Conservation Strategy*. Mississippi Department of Wildlife, Fisheries and Parks, Mississippi Museum of Natural Sciences, Jackson, Mississippi.

Moore, D.M. and R.D. Rivers (1996) *Executive Summary: Program Objectives, Action Plans, and Implementation Strategies at a Glance*. Comprehensive and Conservation Management Plan, Part 1. Barataria-Terrebonne National Estuary Program, Thibodeaux, Louisiana.

Myster, R. W. and S.T. Pickett (1992) Dynamics of associations between plants in ten old fields during thirty one years of succession. *Journal of Ecology* 80: 291-302.

Natural Resources Conservation Service (2003) *Wetland Restoration, Enhancement, and Management*. USDA NRCS Wetland Science Institute, January 2003.

Natural Resources Conservation Service (2005) *Bird Use of Restoration Sites: Influences of Location and Vertical Structure*. USDA NRCS Technical Notes 190-34, December 2005.

Natural Resources Conservation Service (2006) *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin.* United States Department of Agriculture Handbook 296.

Natural Resources Conservation Service (2007) Hydrology Tools for Wetland Determination. Chapter 19, *Engineering Field Handbook*. Fort Worth, Texas: US Department of Agriculture.

Natural Resources Conservation Service (2010) *Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 7.0.* L.M. Vasilas, G.W. Hurt, C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

Natural Resources Conservation Service (2011)[1] *Web Soil Survey* [website]. U.S. Department of Agriculture, Natural Resources Conservation Service, *Soil Survey Staff*. Accessed September 6, 2011. Available URL: http://websoilsurvey.nrcs.usda.gov/app/

Natural Resources Conservation Service (2011)[2] *The PLANTS Database* [website]. U.S. Department of Agriculture, Natural Resources Conservation Service, National Plant Data Center. Accessed September 8, 2011. Available URL: http://plants.usda.gov

Natural Resources Conservation Service (2012)[1] *National Hydric Soils List by State* [website]. U.S. Department of Agriculture, Natural Resources Conservation Service, *Soil Survey Staff*. Accessed July 16, 2012. Available URL: http:// http://soils.usda.gov/use/hydric/

Natural Resources Conservation Service (2012)[2] *Official Soil Series Descriptions* [website]. U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey Staff. Accessed July 14, 2012. Available URL: http://soils.usda.gov/technical/classification/osd/index.html

National Fish, Wildlife and Plants Climate Adaptation Strategy Management Team (2012) *National Fish, Wildlife and Plants Climate Adaptation Strategy.* Public Review Draft*,* January 2012.

National Technical Committee for Hydric Soils (2007) *The Hydric Soil Technical Standard. Technical Note 11.* Available URL: ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/note11.pdf Accessed July 10, 2012.

Omernik, J.M. (1987) *Ecoregions of the Conterminous United States (map supplement): Annals of the Association of American Geographers*, v. 77, no. 1, p. 118-125, scale 1:7,500,000.

Reader, R.J. (1997) Potential effects of granivores on old field restoration. *Canadian Journal of Botany* 75: 2224-2227.

Richardson, J.L., J.L. Arndt, and J.A. Montgomery (2001) Hydrology of Wetland and Related Soils In Richardson, J.L and M.J. Vepraskas (eds.) Chapter 3, *Wetland*

Soils. Genesis, Hydrology, Landscapes and Classification. pp. 35-84. Boca Raton, London, New York: CRC Press.

Ritter, D.F. (1986) *Process Geomorphology*. 2nd edition, Wm. C. Brown Publishers, Dubuque, Iowa.

Savage, L., J. Anthony, and R. Buchholz (1996) *Rodent damage to direct seeded willow oak in Louisiana*. Annual Conference of Southeastern Association of Fish and Wildlife Agencies Proceedings 59: 340-349.

Schoeneberger, P.J., D.A. Wysock, E.C. Benham, and W.D. Broderson (1998) *Field Book for Describing and Sampling Soils*. USDA NRCS National Soil Survey Center, USDA, Linkcoln, NE.

Schumacher, B.A., W.J. Day, M.C. Amacher and B.J. Miller (1988) *Soils of the Mississippi River Alluvial Plain in Louisiana*. Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center.

Society of American Foresters (2011) *The Dictionary of Forestry* [website]. Copyright 1988 by the Society of American Foresters. Accessed December 1, 2011. Available URL: http://dictionaryofforestry.org

Soil Conservation Service (1982) *Soil Survey of Point Coupee and West Baton Rouge Parishes, Louisiana*. United States Department, Soil Conservation Service in cooperation with the Louisiana Agricultural Experiment Station and Louisiana Soil and Water Conservation Committee

Taylor, D. (2006) *Forest Management and Bats*. Bat Conservation International Publication.

Thibaut, M. (2012) *House Concurrent Resolution123: To establish the False River Watershed Council.* 18th Congressional District. 2012 Regular Session of the Louisiana House of Representatives. Baton Rouge, Louisiana.

Twedt, D., D. Pashley, C. Hunter, A. Mueller, C. Brown and B. Ford (1999)[1] *Partners in Flight Bird Conservation Plan for the Mississippi Alluvial Valley*, Version 1.0.

Twedt, D.J. and C.R. Loesch (1999)[2] Forest area and distribution in the Mississippi Alluvial Valley: implications for breeding bird conservation. *Journal of Biogeography*. 26:1215-1224.

Twedt, D.J. and J. Portwood (2003) Synergy of agroforestry and bottom land hardwood afforestation. *Proceedings 6th Conference on Agroforestry in North America*. 6: 85-98.

Twedt, D.J. (2004) Stand development on reforested bottom lands in the Mississippi Alluvial Valley. *Plant Ecology* 172: 251-263

Twedt, D.J. and C. Best (2004) Restoration of floodplain forests for conservation of migratory land birds. *Ecological Restoration* 22 (3): 194-203.

Twedt, D.J, W.B. Uihlein III, and A. B. Elliott (2006) A spatially explicit decision support model for restoration of forested bird habitat. *Conservation Biology* Vol. 20, No. 1: 100-110.

Twedt, D.J, S.G. Somershoe, K.R. Hazler, R.J. Cooper (2010) Landscape and vegetation effects on avian reproduction on bottomland forest restorations. *Journal of Wildlife Management* 74(3): 423-436, 2010; DOI: 10.2193/2008-563.

Tiner (1999) *Wetland Indicators: A Guide to Wetland Identification, Delineation, Classification, and Mapping*. Boca Raton: CRC Press.

U.S. Army Corps of Engineers (1987) *Corps of Engineers Wetland Delineation Manual*. USACE Waterways Experiment Station Technical Report Y-87-1.

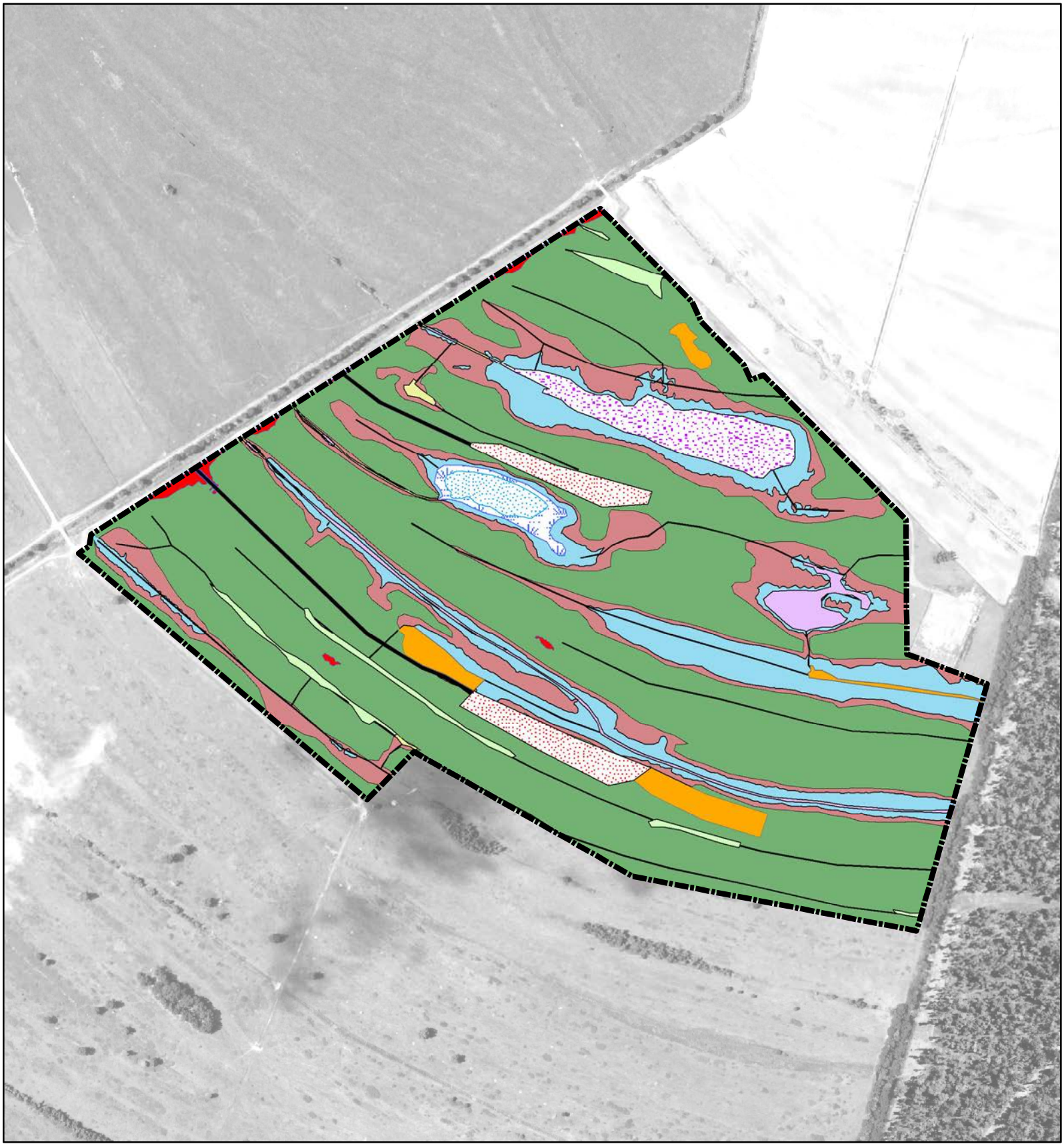
U.S. Army Corps of Engineers (2010) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (ver 2.0).* ERDC/EL TR-10-20. U.S. Army Corps of Engineers, Environmental Laboratory, Vicksburg, MS, November 2010.

U.S. Fish and Wildlife Service (1988) *National List of Vascular Plant Species that occur in Wetlands*. U.S. Fish & Wildlife Service Biological Report 88 (26.9).

U.S. Fish and Wildlife Service (2011) *National Wetlands Inventory Wetlands Mapper* [website]. U.S. Department of Interior, U.S. Fish and Wildlife Service. Accessed 23 March 2011. Available URL:http:// 137.227.242.85/wetland/wetland.html

Wiedenfield, D.A, M. Swan, D.P. Muth (1996) *Migratory Bird (Neotropical and Shorebirds) Management Plan for the Barataria and Terrebonne Basins of Louisiana*. Barataria-Terrebonne National Estuary Program Publication 30, August 1996.

Attachment MWP-A



Legend

- Baldcypress Swamp Enhancement (B) (2.1 acres)
- Baldcypress Swamp Rehabilitation (A) (4.7 acres)
- Baldcypress Swamp Rehabilitation (B) (9.1 acres)
- Baldcypress Swamp Re-establishment (A) (38.8 acres)
- Type 1 Bottomland Hardwood Re-establishment (A) (47.1 acres)
- Type 1 Bottomland Hardwood Rehabilitation (A) (1.3 acres)
- Type 2-3 Bottomland Hardwood Rehabilitation (A) (5.3 acres)
- Type 2-3 Bottomland Hardwood Re-establishment (A) (195.6 acres)
- Wildlife Opening (A) (7.6 acres)
- Existing Forest (B) (6.1 acres)
- Water (C) (2.4 acres)
- Access Trail (A) (2.0 acres)
- Nonwetland Bottomland Hardwood Afforestation (A) (1.7 acres)

N

800 400 0 800

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

MITIGATION FEATURES

Pointe Coupee Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	11/14/2012
Map No. :	CF01_Mitigation.mxd

DELTA LAND SERVICES

FIGURE 1

Legend

Barataria-Terebonne Basins

18 9 0 18

Miles

Ponderosa Ranch of Pointe Coupee Mitigation Bank

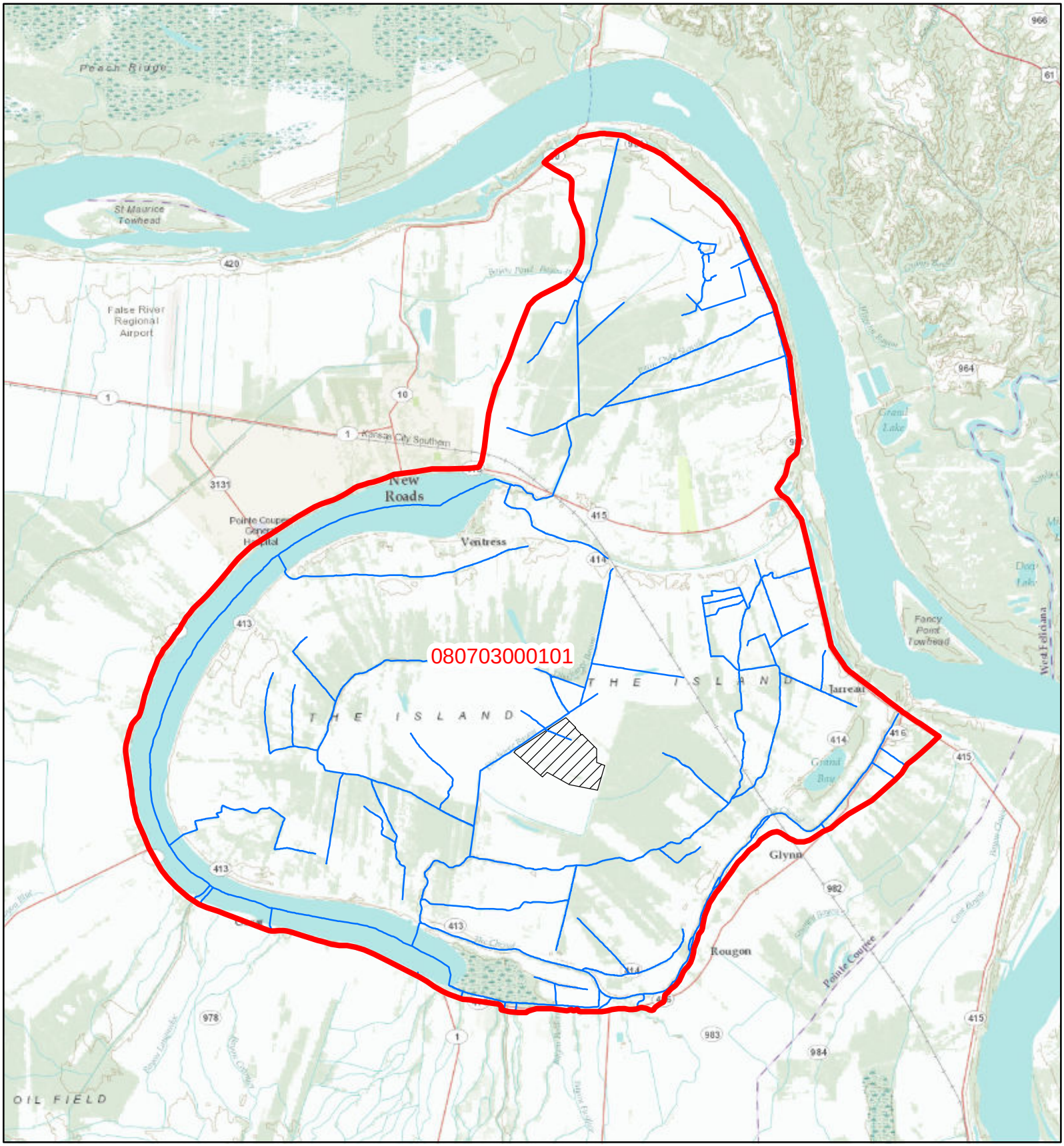
BARATARIA-TERREBONNE COMPLEX

Pointe Coupee Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	11/14/2012
Map No. :	CF02_BTNEP.mxd

DELTA LAND SERVICES

Figure 2



Legend

Project Area (323.8 Acres)

False River Watershed

8,000 4,000 0 8,000

Feet

Note: Flow Lines and 12-digit HUC from USGS National Hydrography Dataset (NHD)

Ponderosa Ranch of Pointe Coupee Mitigation Bank

FALSE RIVER WATERSHED

Pointe Coupee Parish, LA

Created :	DEB/ArcView
Approved :	DEB
Date :	11/14/2012
Map No. :	CF03_FalseRiverWatershed.mx

DELTA LAND SERVICES

FIGURE 3

Legend

USGS Eight-Digit Hydrologic Unit Codes

14 7 0 14

Miles

Ponderosa Ranch of Pointe Coupee Mitigation Bank

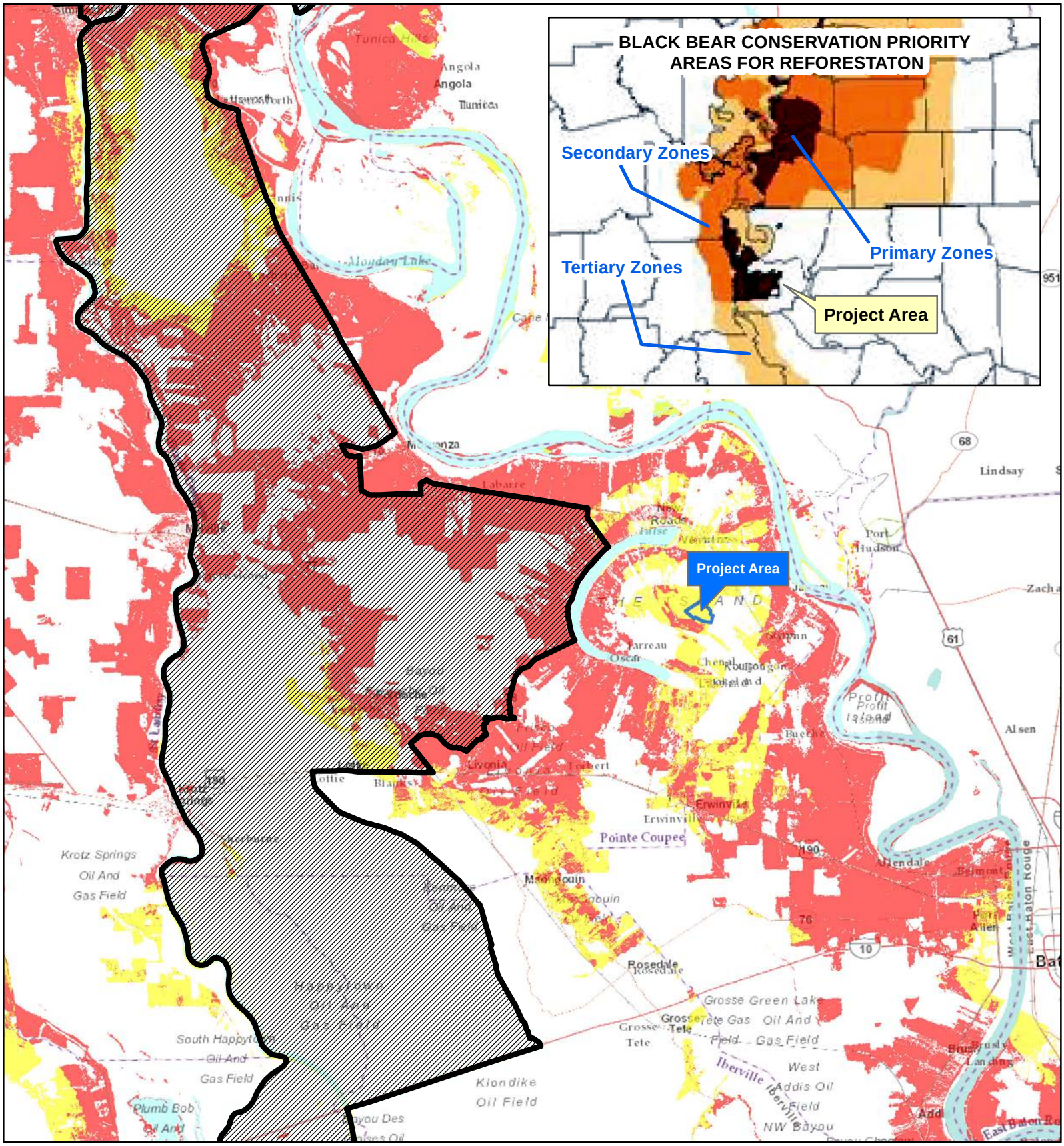
USGS CATALOGING UNITS

Pointe Coupee Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	11/14/2012
Map No. :	CF04_HUCs.mxd

DELTA LAND SERVICES

Figure 4



Legend

- Louisiana Black Bear Critical Habitat

Forest Bird Priority Restoration

- <80% Priority Restoration
- 80-90% Priority Restoration
- >90% Priority Restoration

N

5 2.5 0 5

Miles

Ponderosa Ranch of Pointe Coupee Mitigation Bank

FOREST BIRD AND LOUISIANA BLACK BEAR PRIORITY RESTORATION AREAS

Pointe Coupee Parish, LA

Created :	DEB/ArcView
Approved :	DEB
Date :	11/14/12
Map No. :	CF05_BlackBear.mxd

DELTA LAND SERVICES

FIGURE 5

Legend

- Pasture/ Hay (44.90%)
- Woody Wetlands (36.49%)
- Cultivated Crops (11.41%)
- Existing Wetland Mitigation Sites (7.12%)
- Developed, Low Intensity (0.08%)

2,000 1,000 0 2,000

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

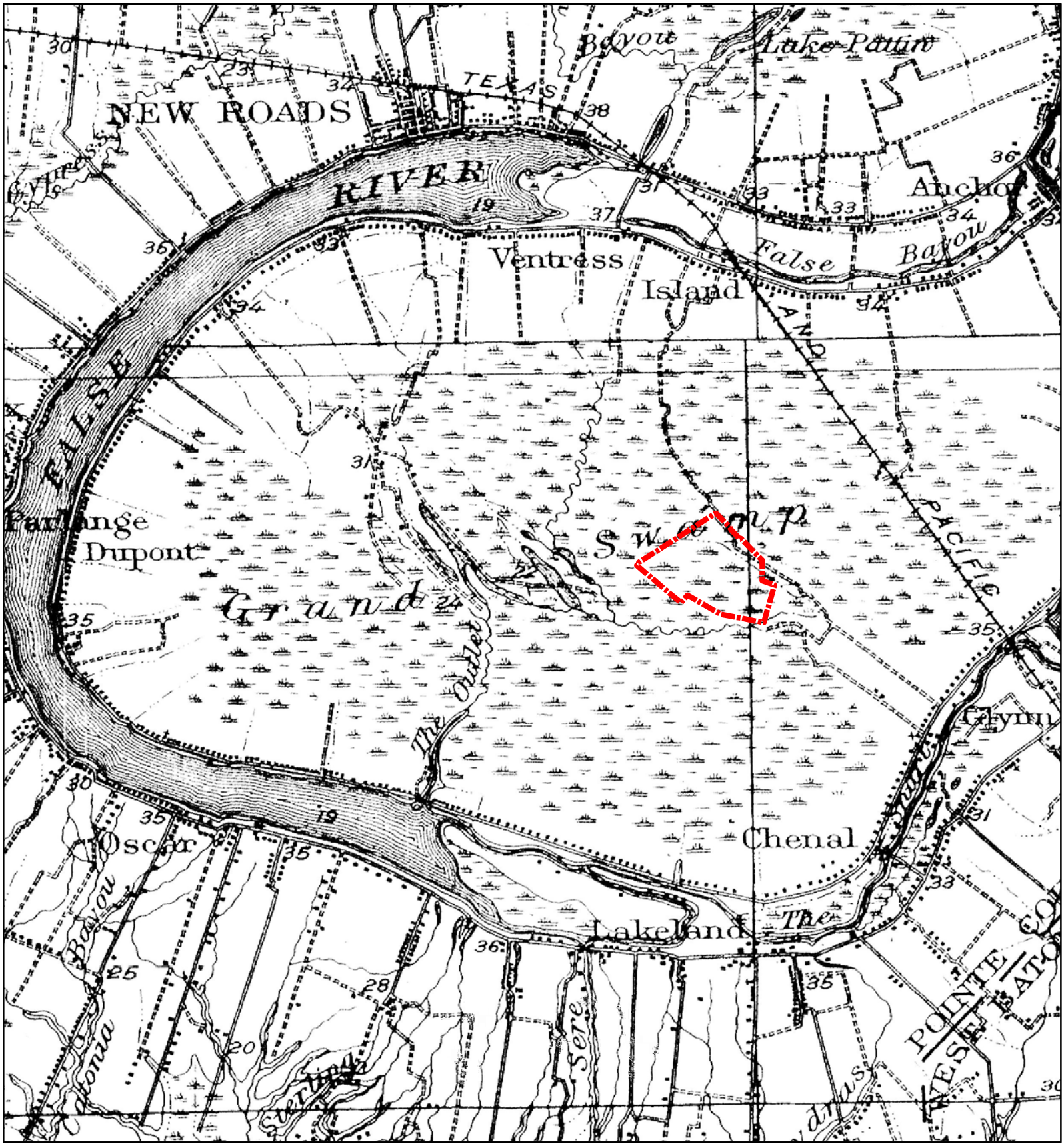
SURROUNDING LAND USE WITHIN ONE MILE RADIUS

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 12/31/2012	
Map No. : CF06_LandUse.mxd	

DELTA LAND SERVICES

FIGURE 6



Legend

Project Area (323.8 Acres)

1 0.5 0 1

Miles

Note: Image aquired from Gulf Engineering Consultants (GEC)

Ponderosa Ranch of Pointe Coupee Mitigation Bank

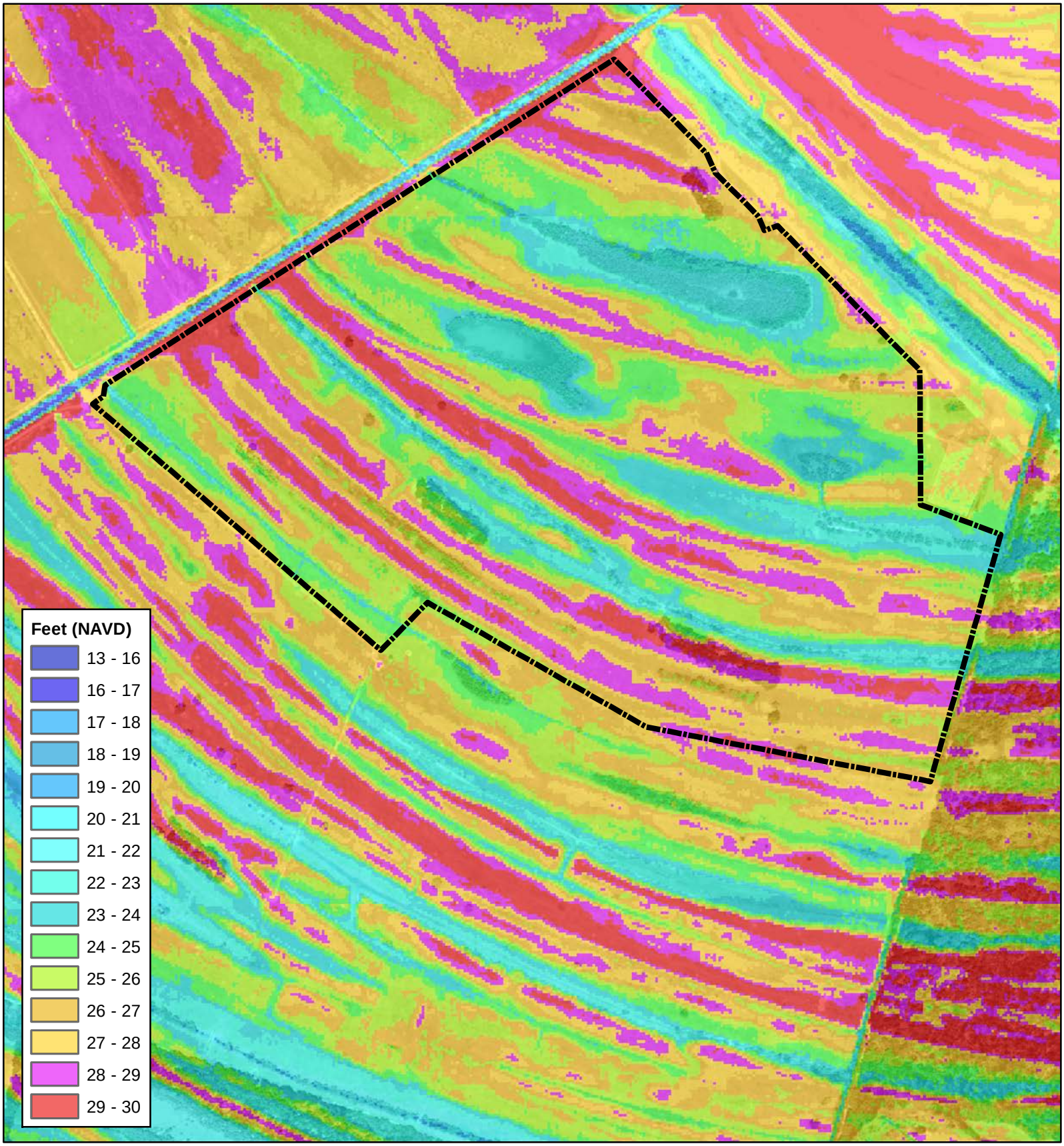
1909 TOPOGRAPHIC MAP

Pointe Coupee Parish, LA

Created : DEB/ArcView	
Approved : DEB	
Date : 11/14/2012	
Map No. : CF07_1909QuadMap.mxd	

DELTA LAND SERVICES

FIGURE 7



Legend

Project Area (323.8 Acres)

N

800 400 0 800

Feet

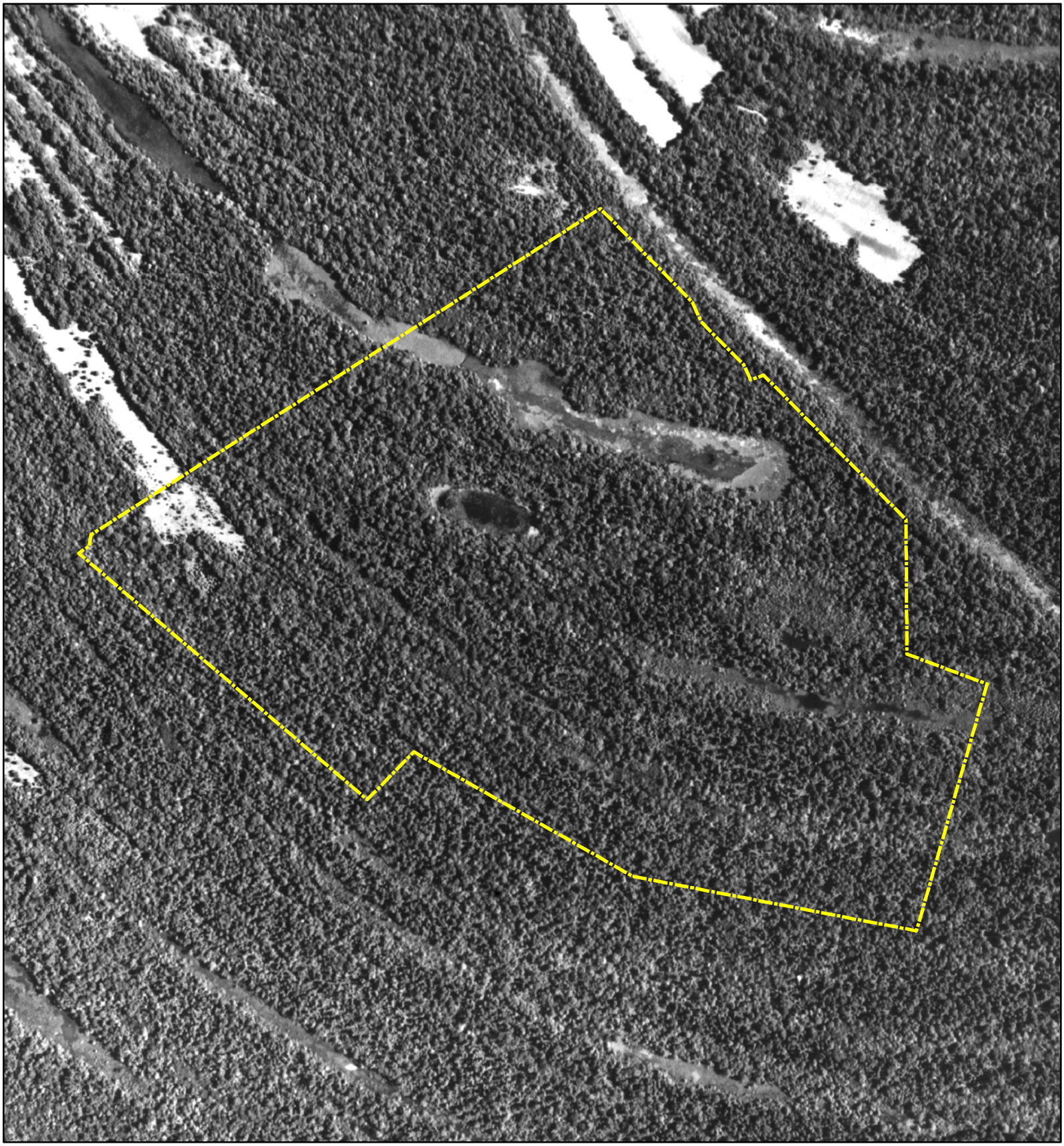
Ponderosa Ranch of Pointe Coupee Mitigation Bank

DIGITAL ELEVATION MODEL

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF08_LIDAR.mxd	

FIGURE 8



Legend

Project Area (323.8 Acres)

N

800 400 0 800

Feet

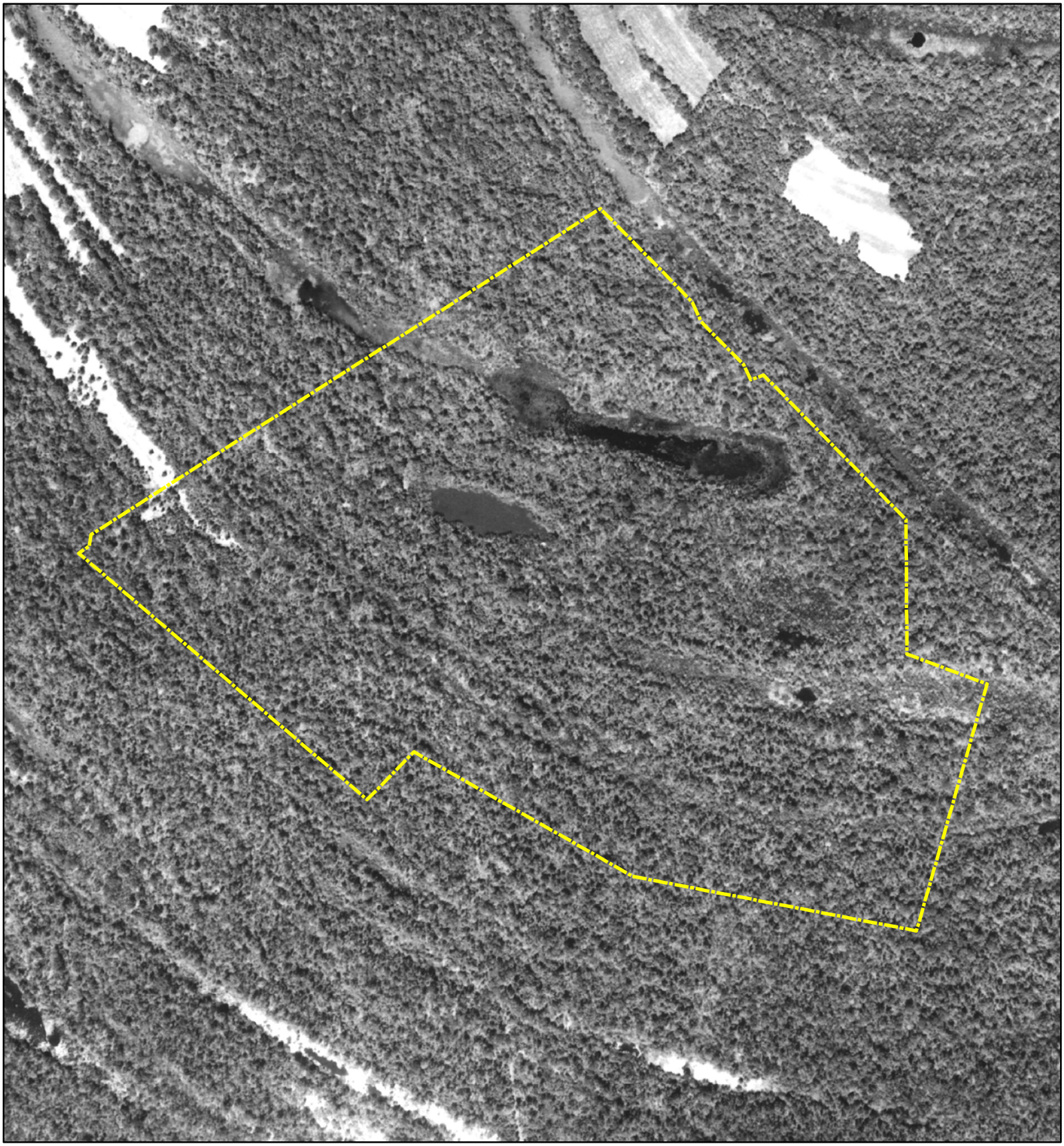
Ponderosa Ranch of Pointe Coupee Mitigation Bank

1941 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : JMJ/ArcView	DELTA LAND SERVICES
Approved : DEB	
Date : 11/14/12	
Map No. : CF09_1941 Aerial.mxd	

FIGURE 9



Legend

Project Area (323.8 Acres)

N

800 400 0 800

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

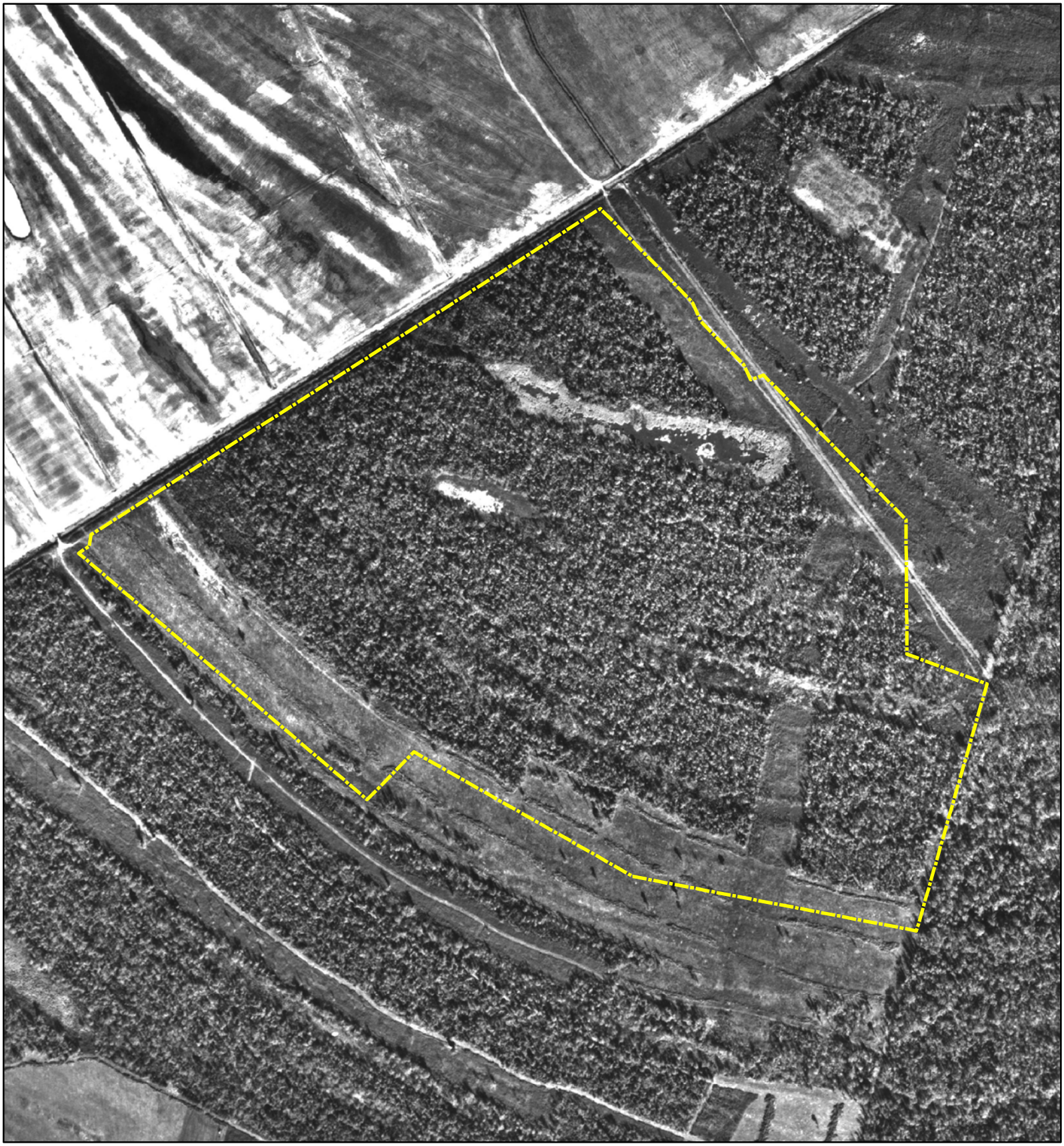
1952 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF10_1952Aerial.mxd	

DELTA LAND SERVICES

FIGURE 10



Legend

Project Area (323.8 Acres)

N

800 400 0 800

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

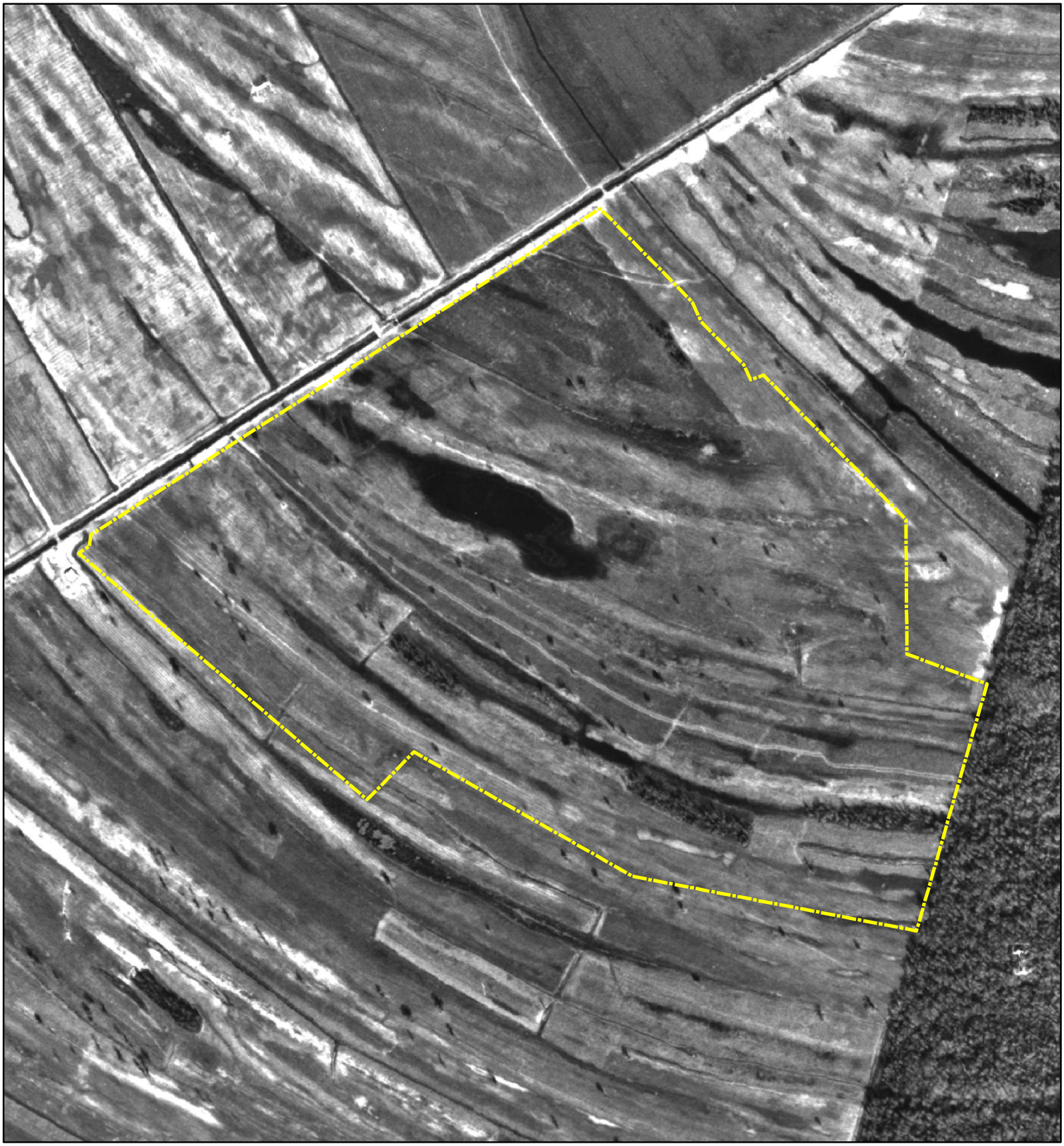
1966 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF11_1966Aerial.mxd	

DELTA LAND SERVICES

FIGURE 11



Legend

Project Area (323.8 Acres)

N

800 400 0 800

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

1972 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF12_1972Aerial.mxd	

DELTA LAND SERVICES

FIGURE 12

Legend

Project Area (323.8 Acres)

N

800 400 0 800

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

1983 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF13_1983Aerial.mxd	

DELTA LAND SERVICES

FIGURE 13

Legend

Project Area (323.8 Acres)

N

800 400 0 800

Feet

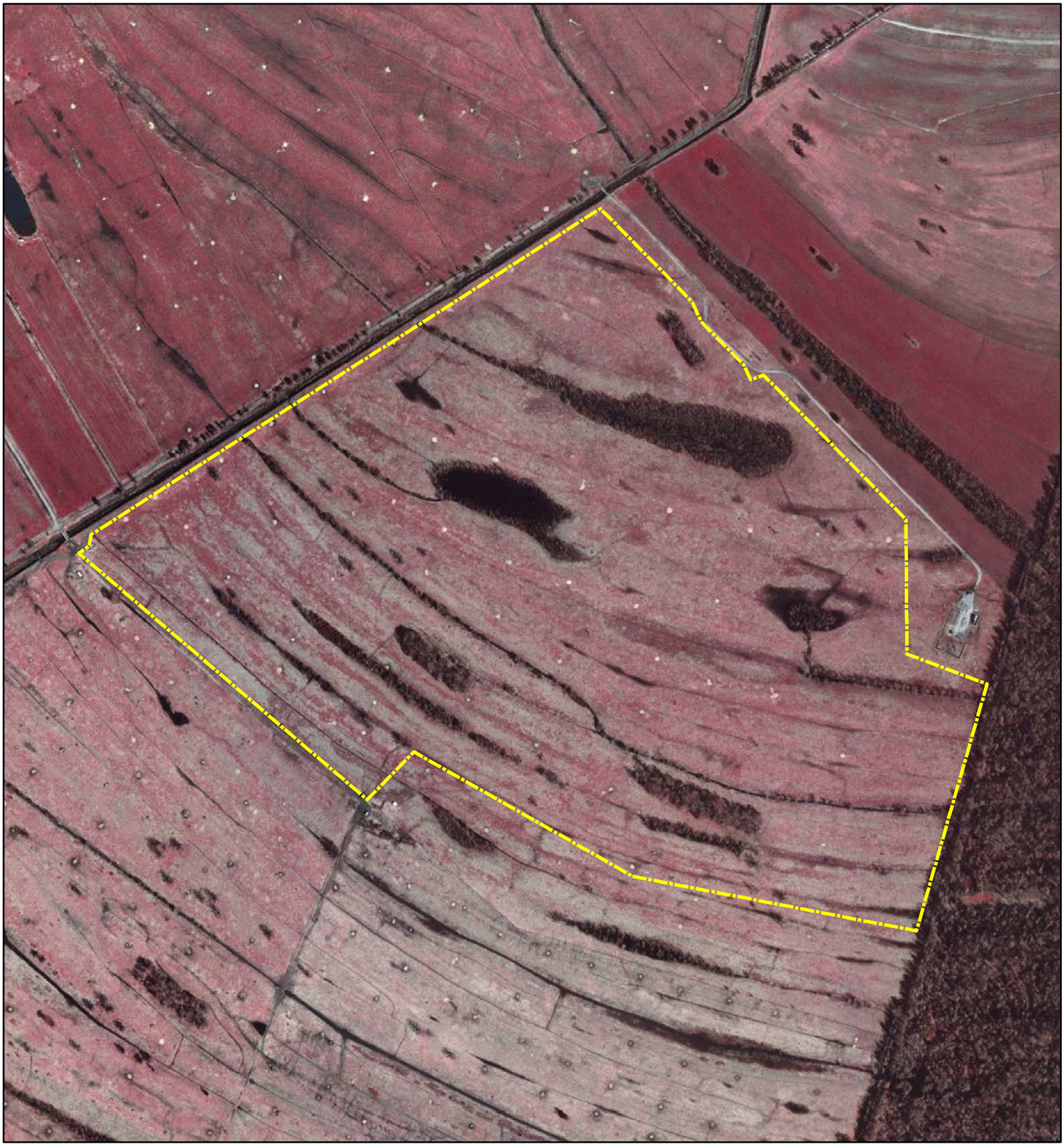
Ponderosa Ranch of Pointe Coupee Mitigation Bank

1998 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : JMJ/ArcView	DELTA LAND SERVICES
Approved : DEB	
Date : 11/14/12	
Map No. : CF14_1998Aerial.mxd	

FIGURE 14



Legend

Project Area (323.8 Acres)

N

800 400 0 800

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

2004 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF15_2004Aerial.mxd	

DELTA LAND SERVICES

FIGURE 15

Legend

Project Area (323.8 Acres)

N

800 400 0 800

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

2010 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF16_2010Aerial.mxd	

DELTA LAND SERVICES

FIGURE 16

Legend

- Improved Pasture (304.0 Acres)
- Bottomland Hardwood Forest (6.1 Acres)
- Chinese Tallow Forest (9.2 Acres)
- Black Willow Forest (2.1 Acres)
- Open Water (2.4 Acres)

N

800 400 0 800

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

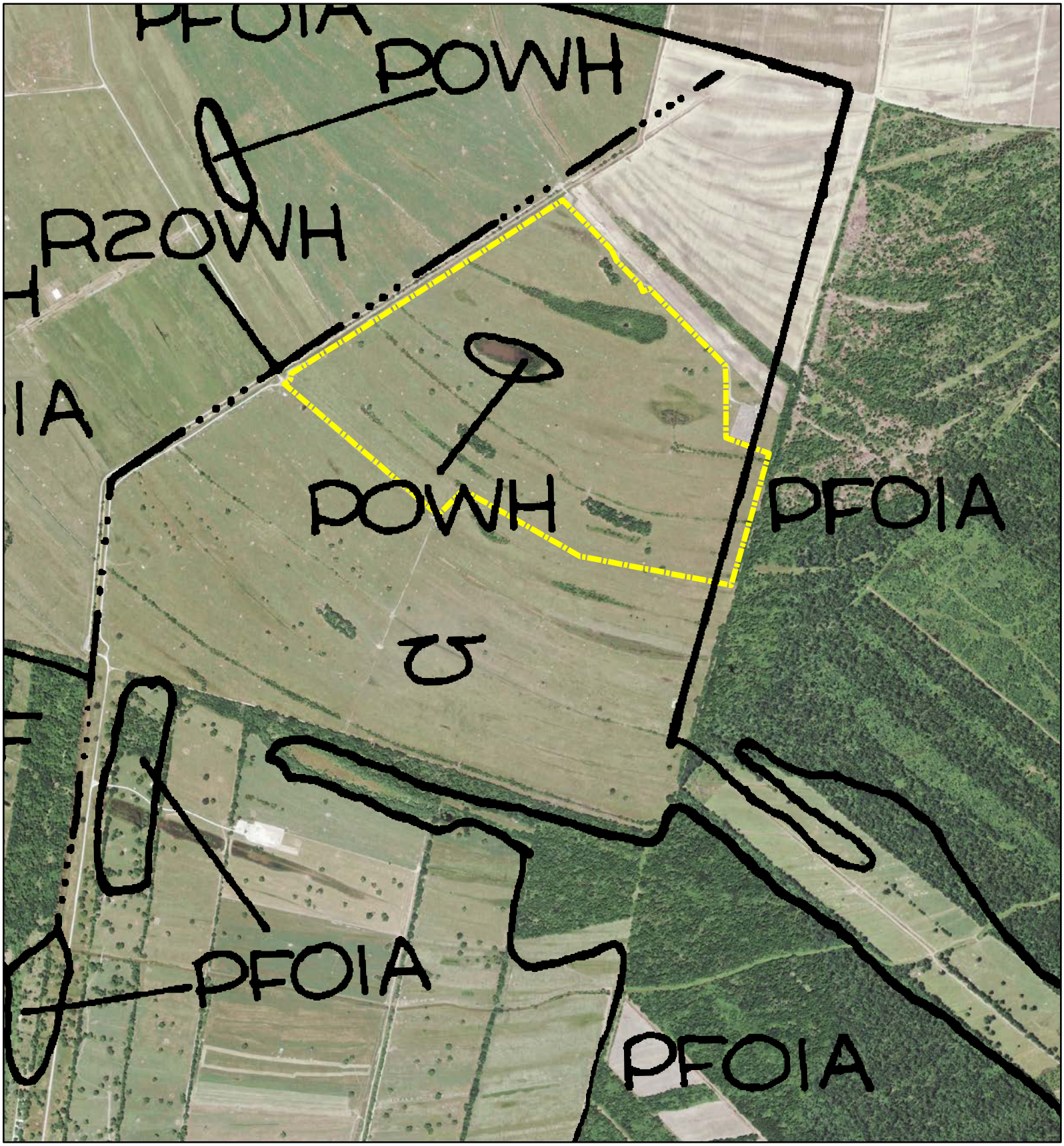
EXISTING CONDITIONS

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF17_ExistingConditions.mxd	

DELTA LAND SERVICES

FIGURE 17



Legend

Project Area (323.8 Acres)

1,500 750 0 1,500

Feet

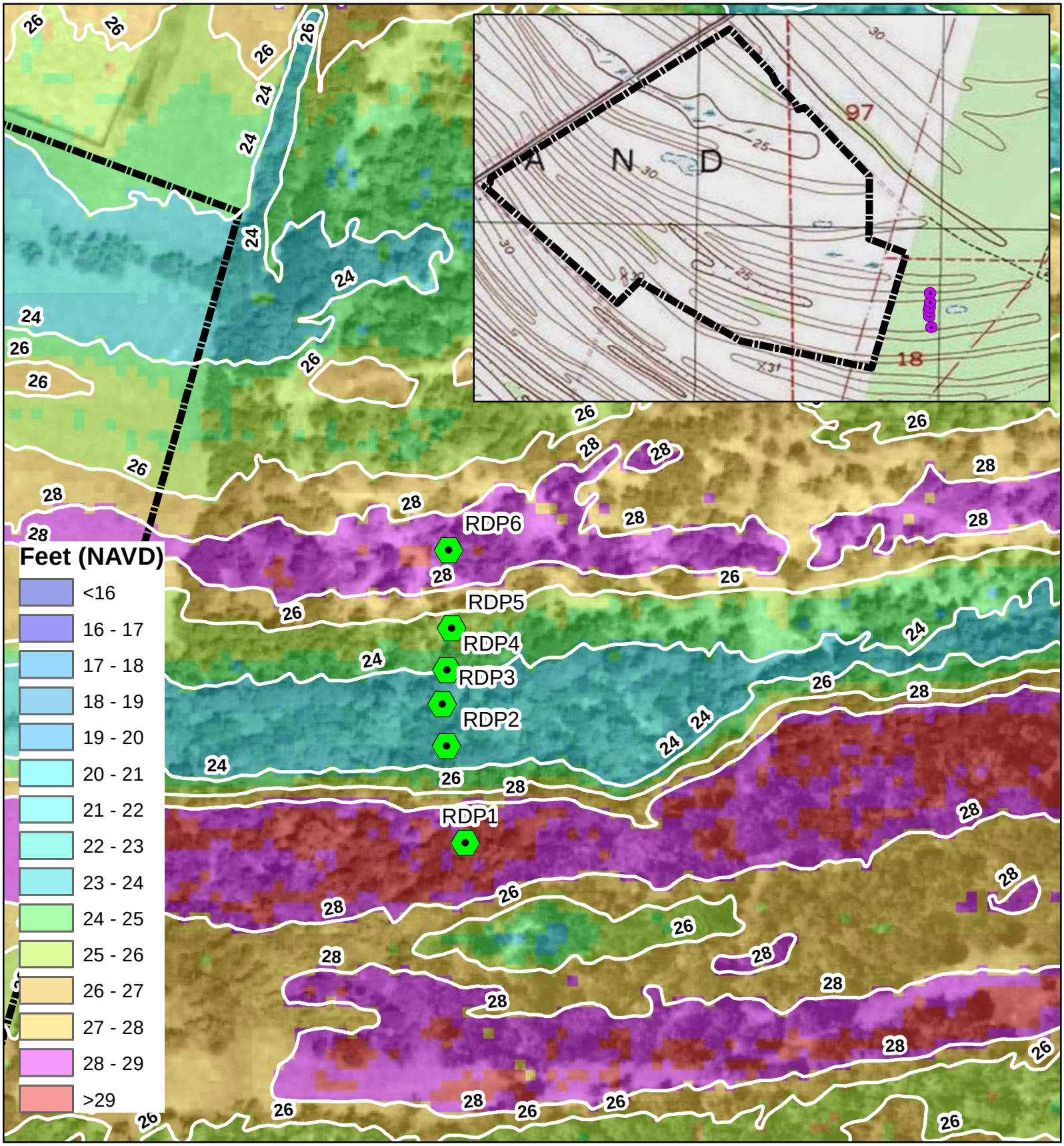
Ponderosa Ranch of Pointe Coupee Mitigation Bank

NATIONAL WETLAND INVENTORY

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF18_NWImap.mxd	

FIGURE 18



Legend

Data Points (April 3, 2011)

200 100 0 200

Feet

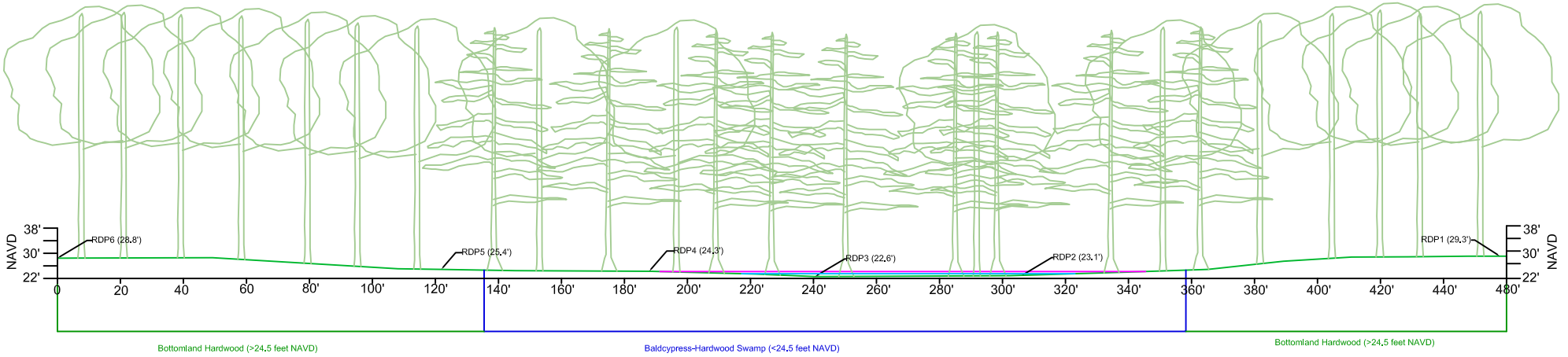
Ponderosa Ranch of Pointe Coupee Mitigation Bank

Reference Wetland Data Point Locations

Pointe Coupee Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	11/14/12
Map No. :	F19_Reference SamplingPts.mxd

FIGURE 19



LEGEND

- WATER MARK ELEVATION (24.2' NAVD)
- SURFACE WATER ELEVATION (23.5' NAVD)
- PROFILE

Ponderosa Mitigation Bank

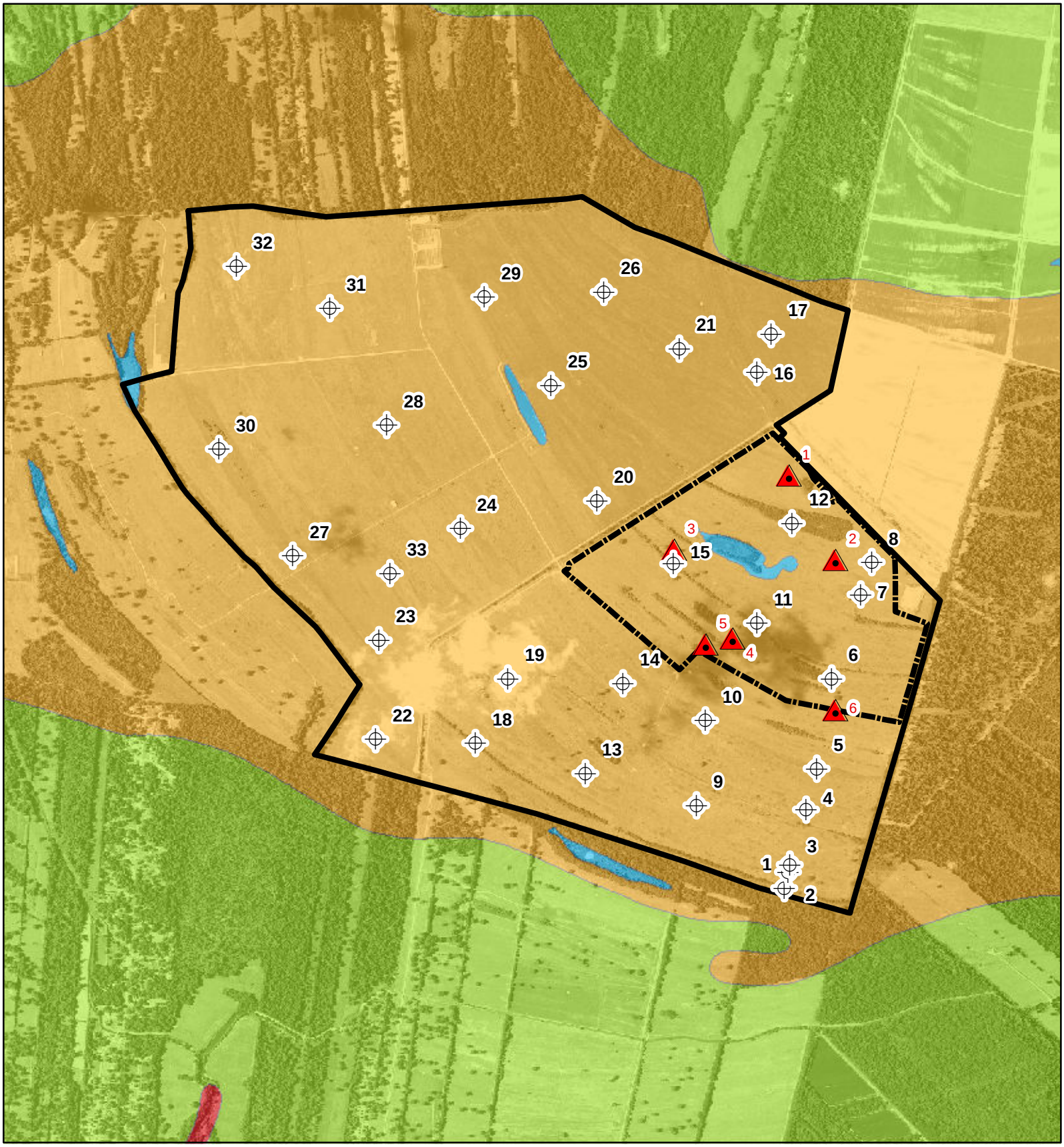
Reference Wetland Cross Sectional Profile

POINTE COUPEE PARISH, LA

Created:	TSC/AutoCAD
Approved:	DEB
Date:	11/14/12
Dwg. No.:	CF20_ReferenceWetlandProfile.dwg

DELTA LAND SERVICES

FIGURE 20



Legend

- Jumonville Property (appx 2000 Acres)
- Project Area (323.8 Acres)
- NRCS Soil Data Points
- Delta Land Services Data Points
- Ce: Commerce silt loam
- De: Dundee-Alligator
- Sm: Sharkey-Tunica complex, gently undulating
- W: Water

2,000 1,000 0 2,000 4,000 6,000 Feet

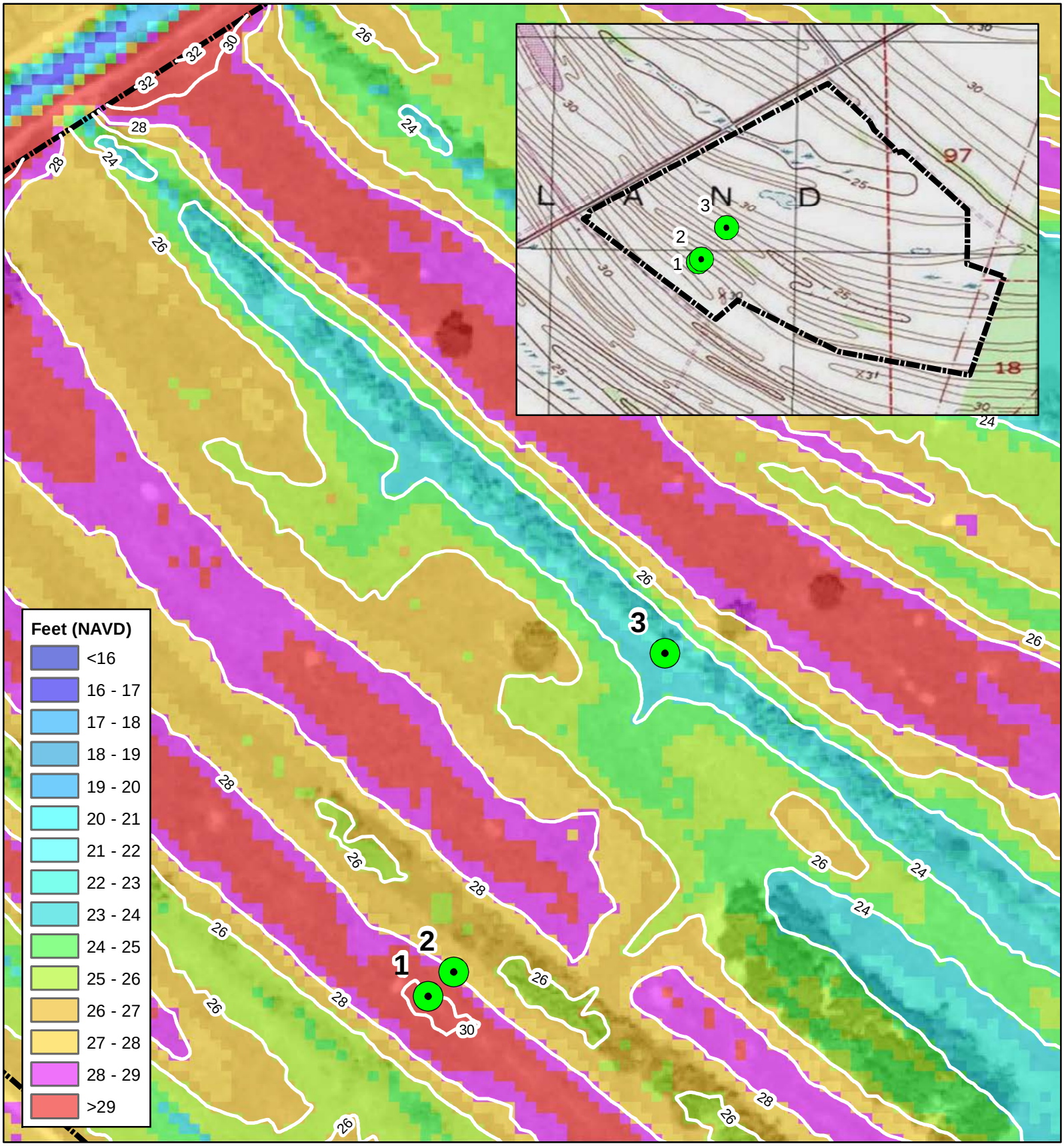
Ponderosa Ranch of Pointe Coupee Mitigation Bank

SSURGO MAP AND SOIL DATA POINT LOCATIONS

Pointe Coupee Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	11/14/12
Map No. :	CF21_Soils.mxd

FIGURE 21



Legend

- Project Area (323.8 Acres)
- IRIS Tubes

N

200 100 0 200

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

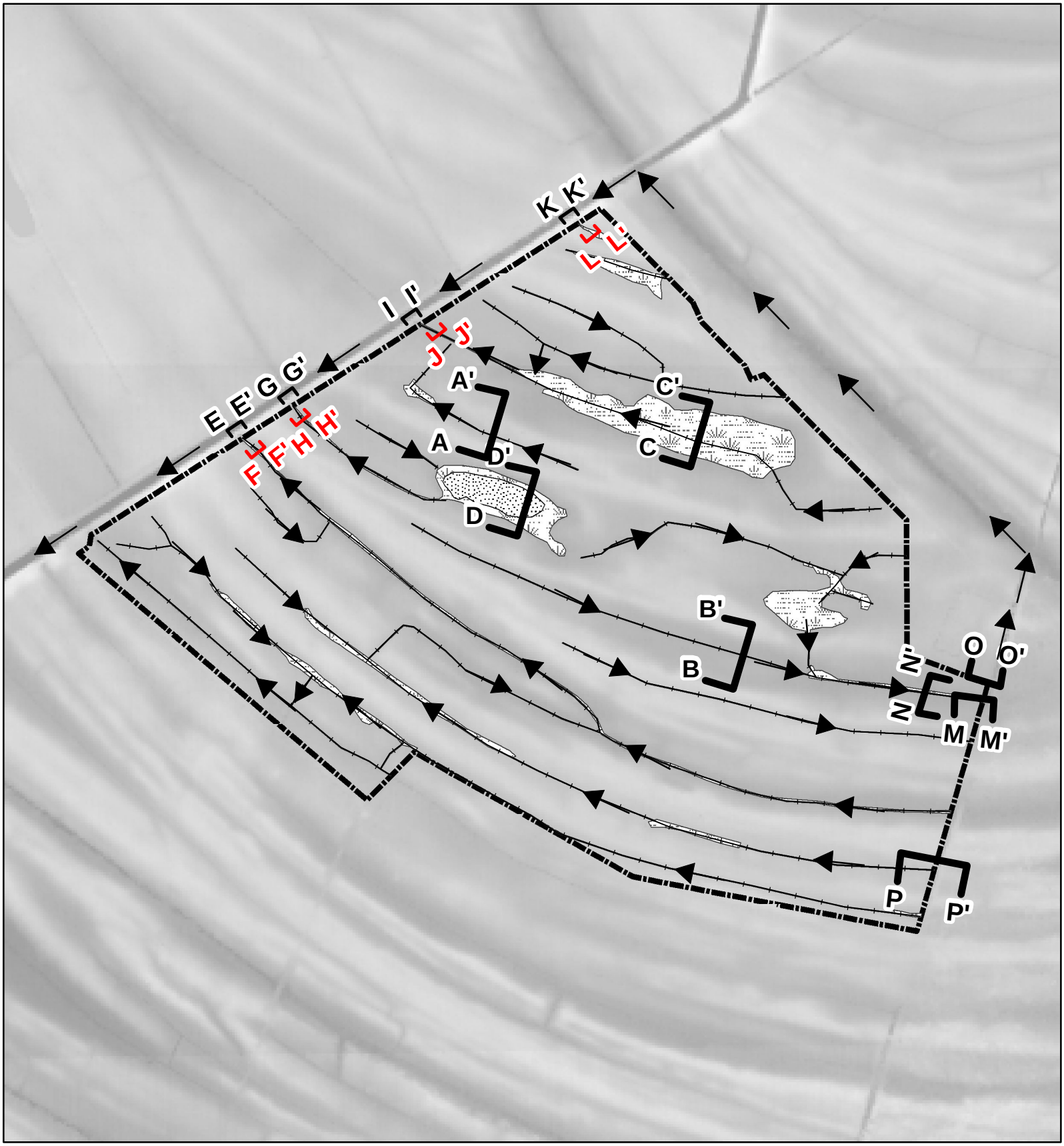
IRIS TUBE LOCATIONS

Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF22_IRIS tubes.mxd	

DELTA LAND SERVICES

FIGURE 22



Legend

- Project Area (323.8 Acres)
- Wetland Area
- Other Waters
- Anthropogenic Drains & Ditches
- Surface Water Flow

N

800 400 0 800

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

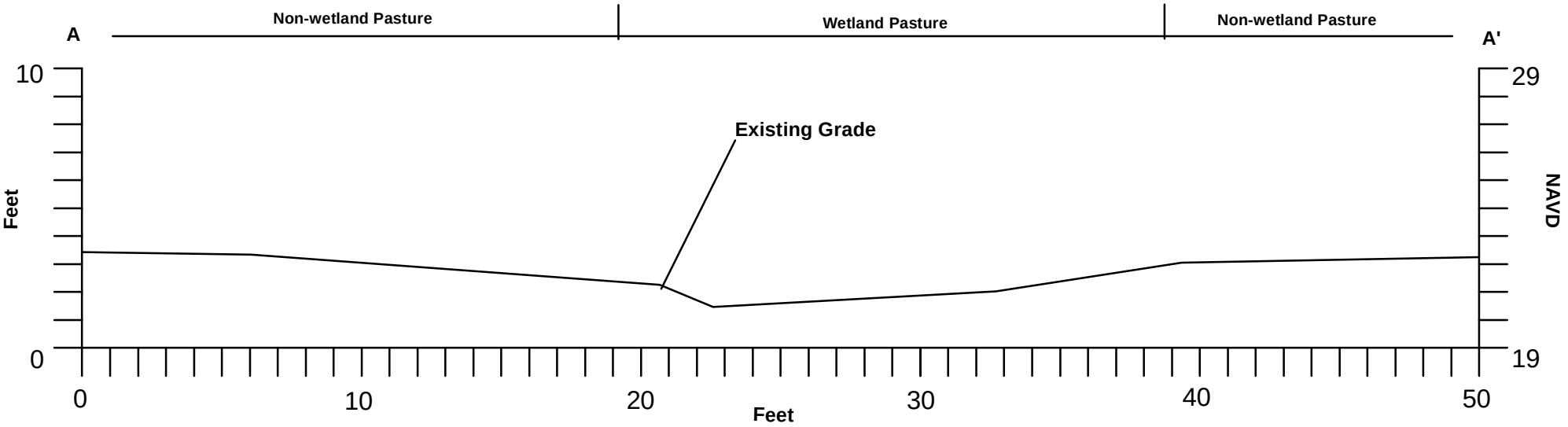
EXISTING CONDITIONS PLANVIEW AND HYDROLOGICAL SURFACE FLOW

Pointe Coupee Parish, LA

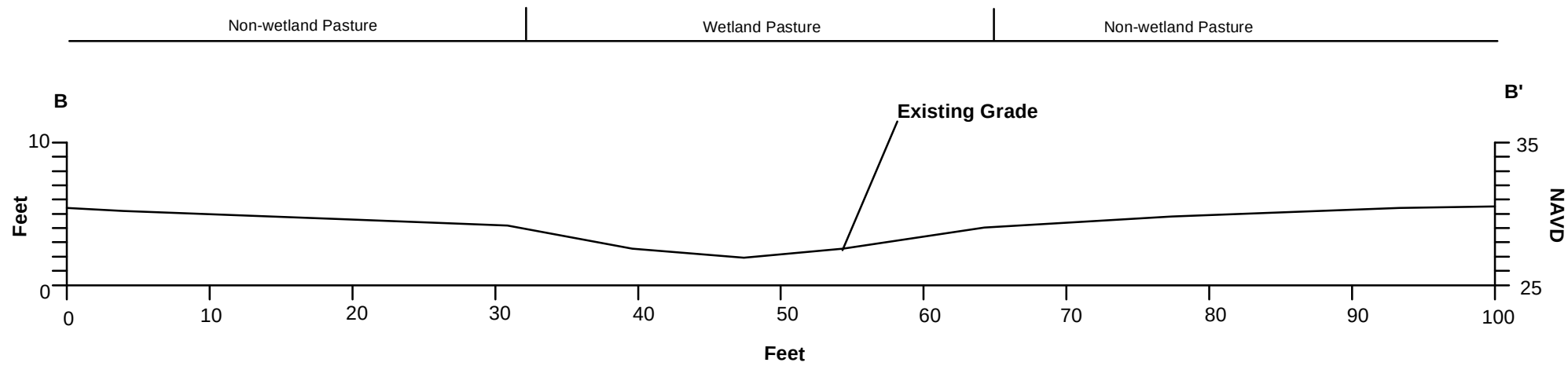
Created :	JMJ/ArcView
Approved :	DEB
Date :	11/14/12
Map No. :	CF23_ExistingPlanView.mxd

DELTA LAND SERVICES

FIGURE 23



Existing Cross-Section A



Existing Cross-Section B

Ponderosa Ranch of Pointe Coupee Mitigation Bank

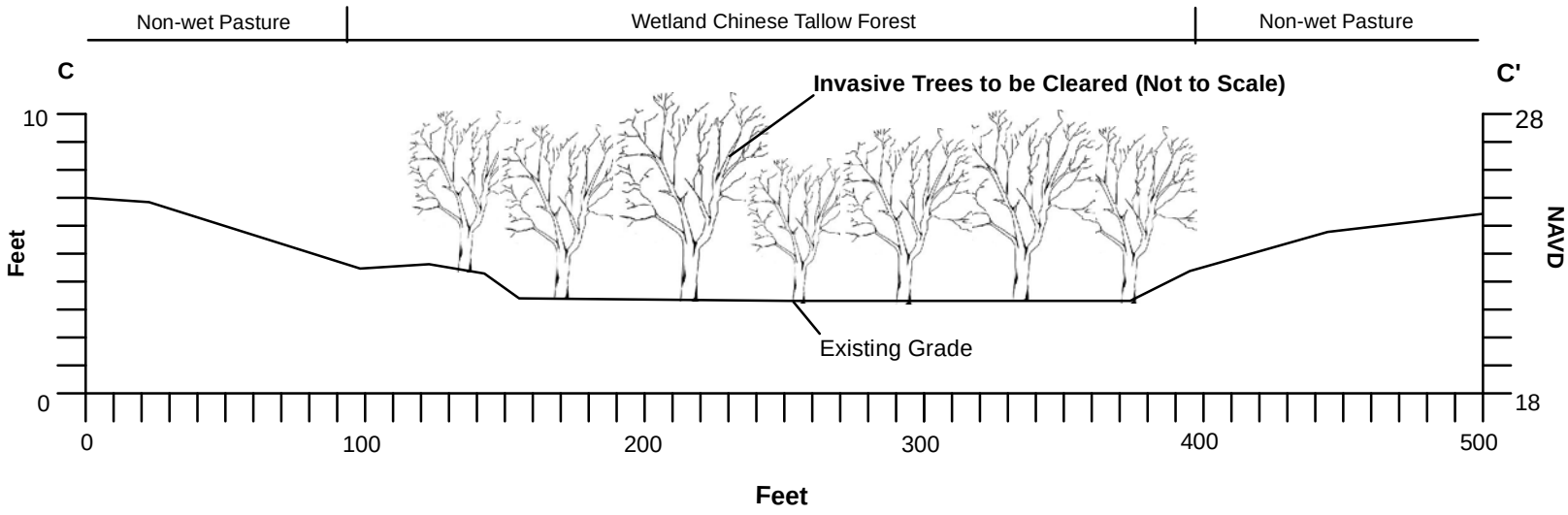
EXISTING CONDITIONS CROSS-SECTIONS A - B

Pointe Coupee Parish, LA

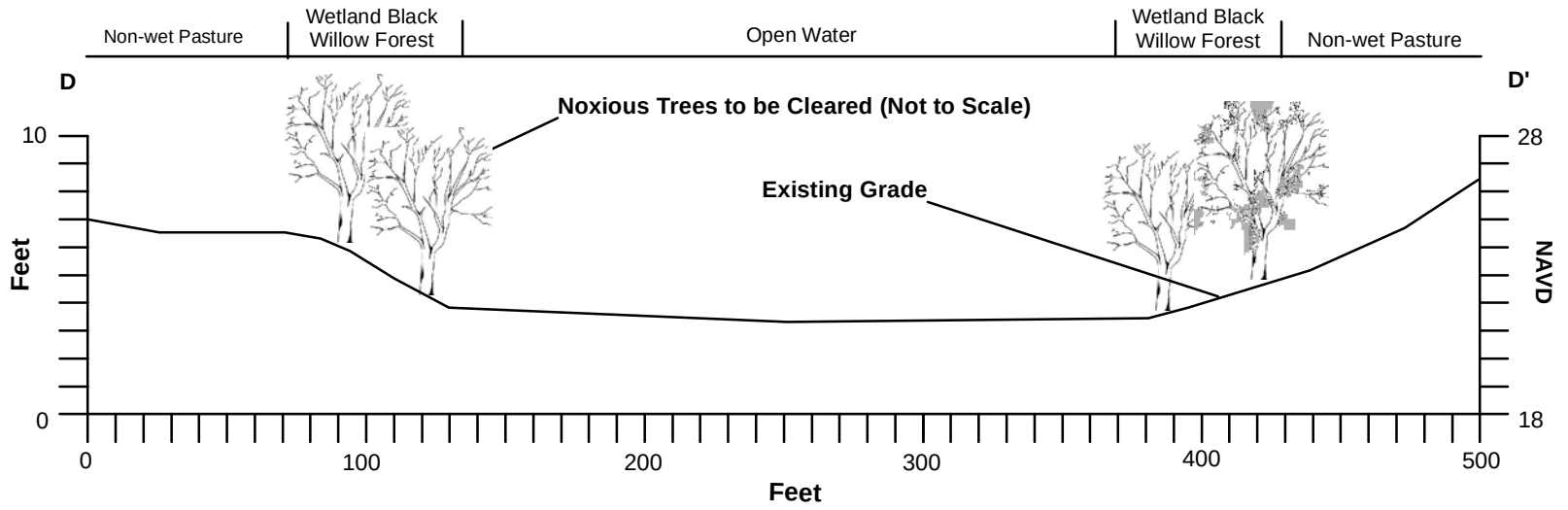
Created :	JMJ/ArcView
Approved :	DEB
Date :	11/14/12
Map No. :	CF24_ExistingXsecA-B.mxd

DELTA LAND SERVICES

FIGURE 24



Existing Cross-Section C



Existing Cross-Section D

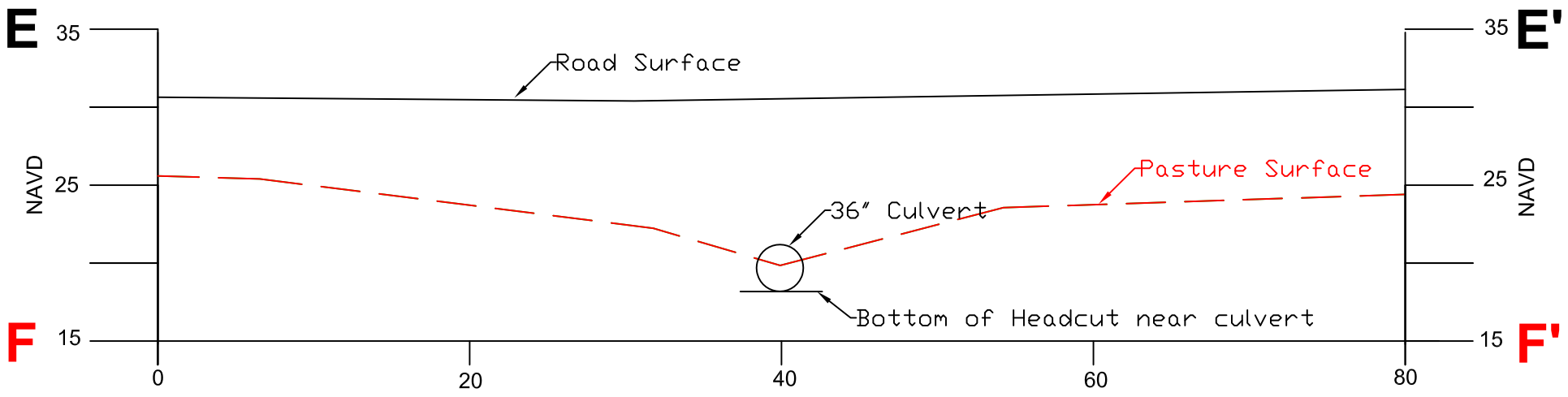
Ponderosa Ranch of Pointe Coupee Mitigation Bank

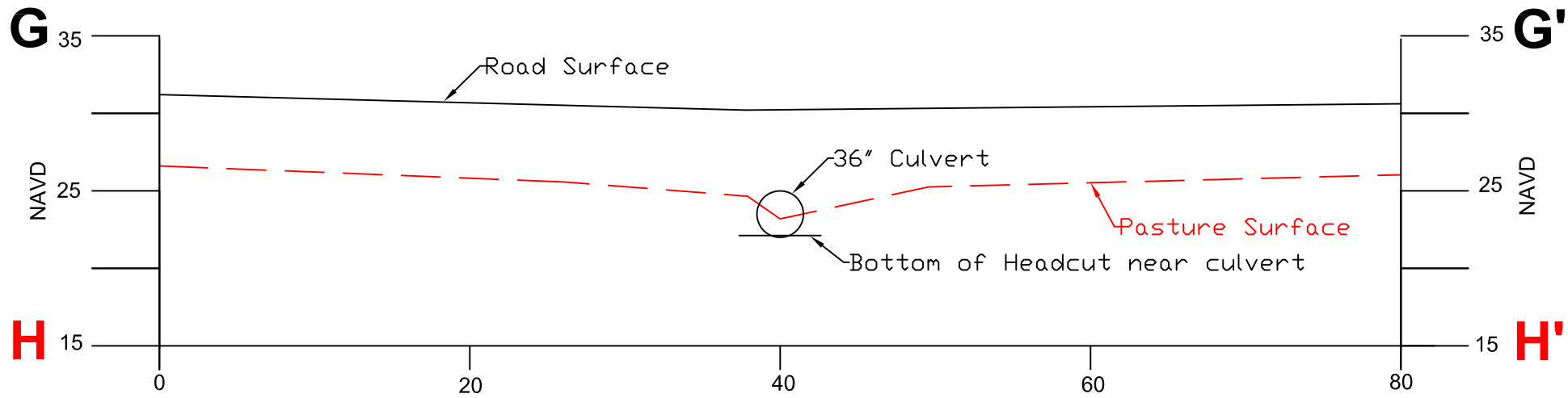
EXISTING CONDITION CROSS-SECTIONS C - D

Pointe Coupee Parish, LA

Created :JMJ/ArcView	
Approved :DEB	
Date : 11/14/12	
Map No. : CF25_ExistingXsecC-D.mxd	

FIGURE 25





Ponderosa Ranch of Pointe Coupee Mitigation Bank

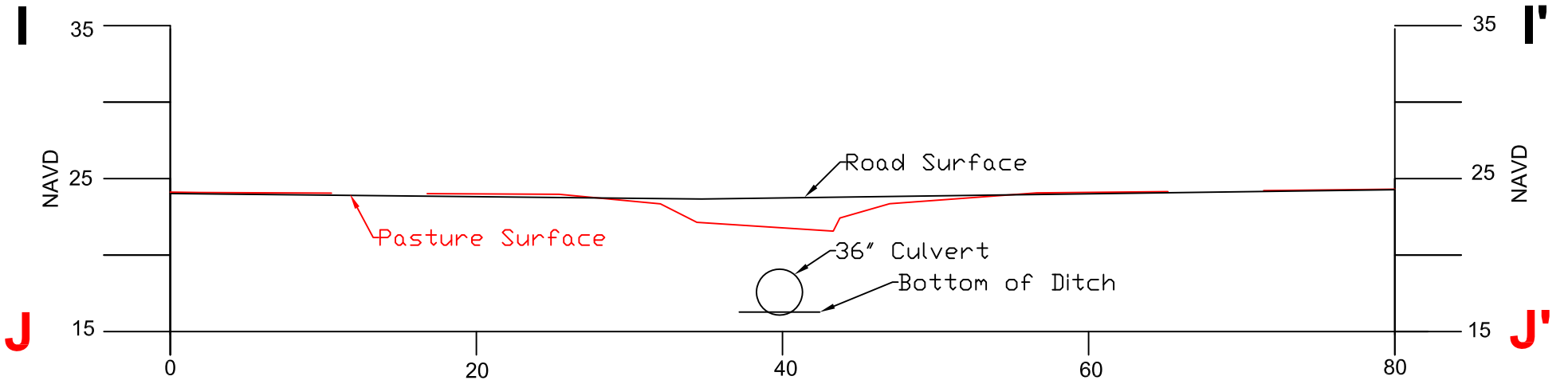
EXISTING CONDITIONS
CROSS SECTIONS E-H

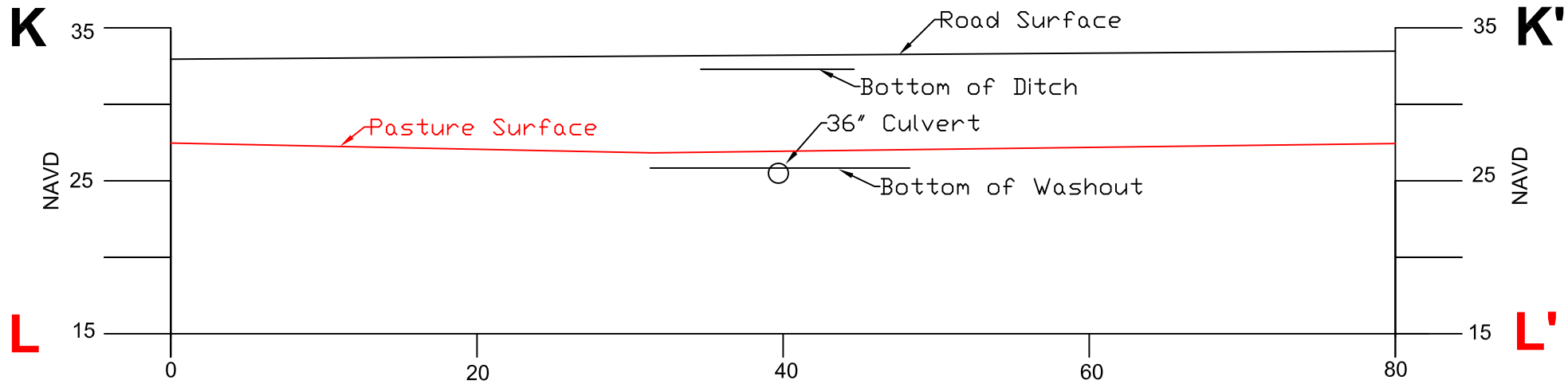
POINTE COUPEE PARISH, LA

Created:	TSC/AutoCAD
Approved:	DEB
Date:	11/14/12
Dwg. No.:	F26-27_XsectionExisting_E-L.dwg

DELTA LAND SERVICES

FIGURE 26





Ponderosa Ranch of Pointe Coupee Mitigation Bank

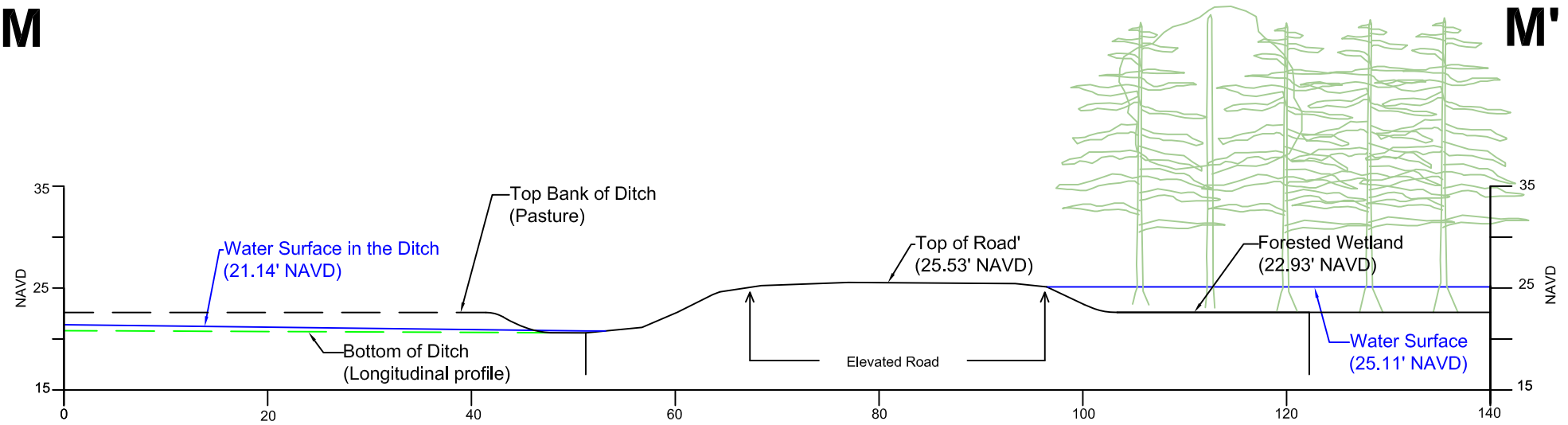
EXISTING CONDITIONS
CROSS SECTIONS I-L

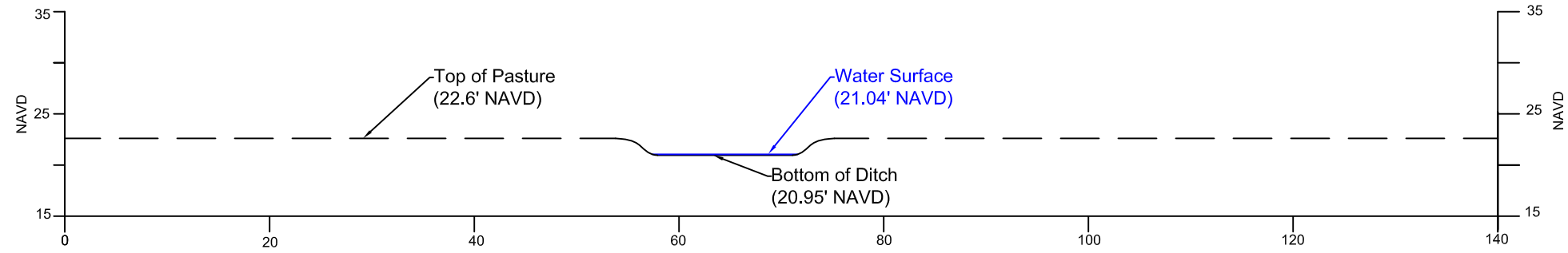
POINTE COUPEE PARISH, LA

Created:	TSC/AutoCAD
Approved:	DEB
Date:	11/14/12
Dwg. No.:	F26-27_XsectionExisting_E-L.dwg

DELTA LAND SERVICES

FIGURE 27





Note: Surface water level is 2.21' feet higher than water in the ditch on the west side.

Ponderosa Ranch of Pointe Coupee Mitigation Bank

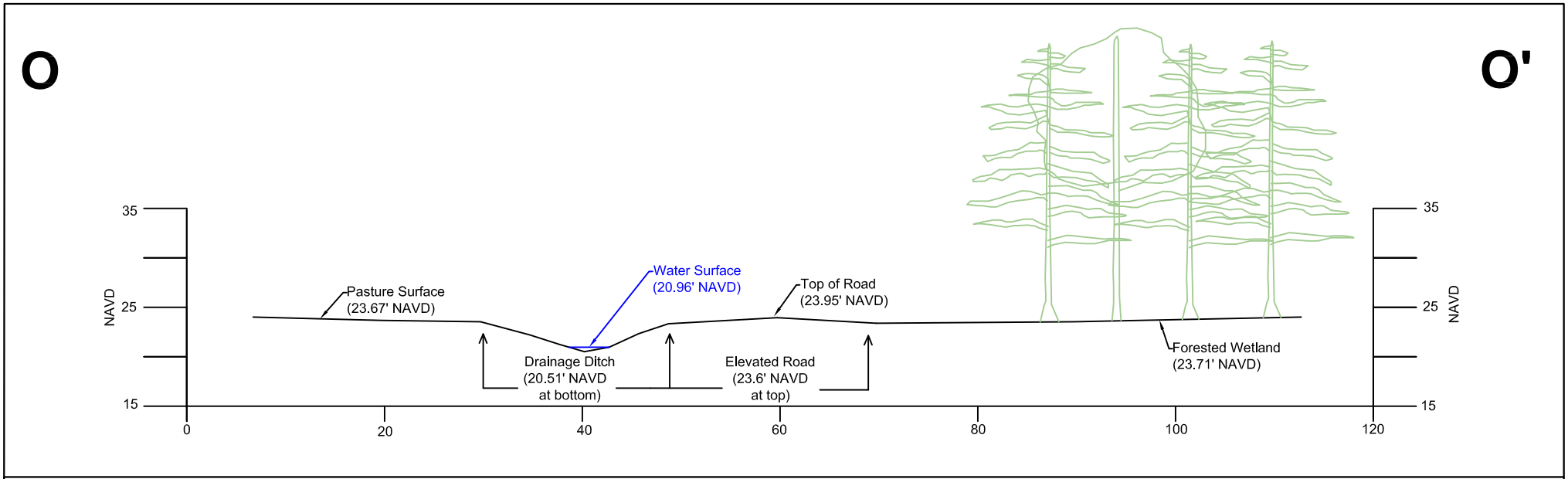
EXISTING CONDITIONS
CROSS SECTIONS M-N

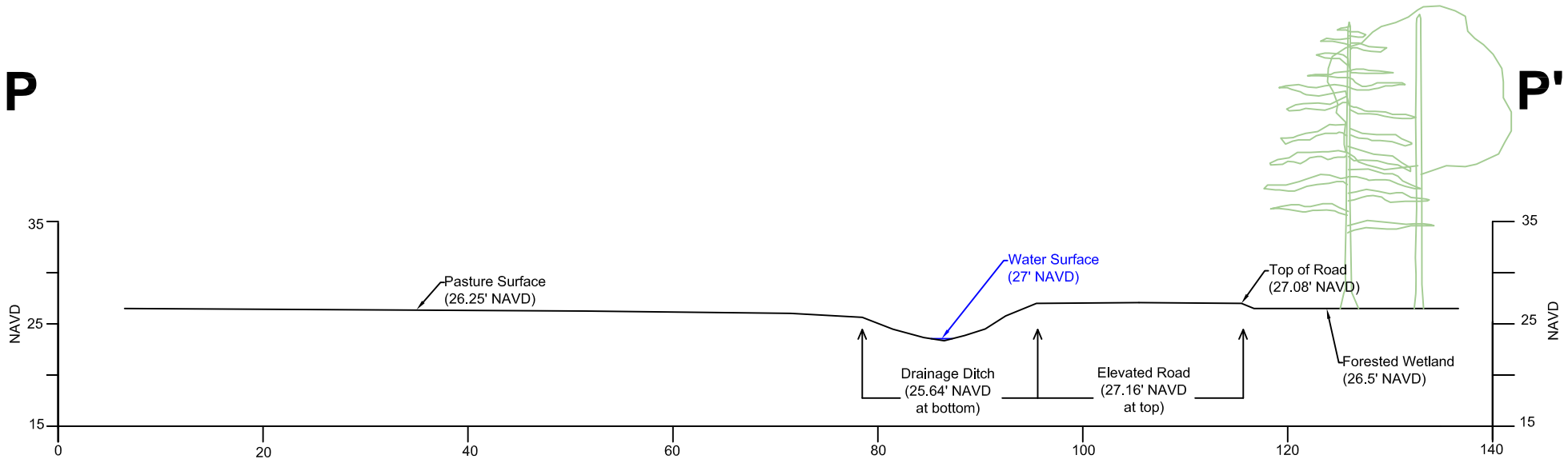
POINTE COUPEE PARISH, LA

Created:	TSC/AutoCAD
Approved:	DEB
Date:	11/17/12
Dwg. No.:	F28-29_XsectionExisting.dwg

DELTA LAND SERVICES

FIGURE 28





Ponderosa Ranch of Pointe Coupee Mitigation Bank

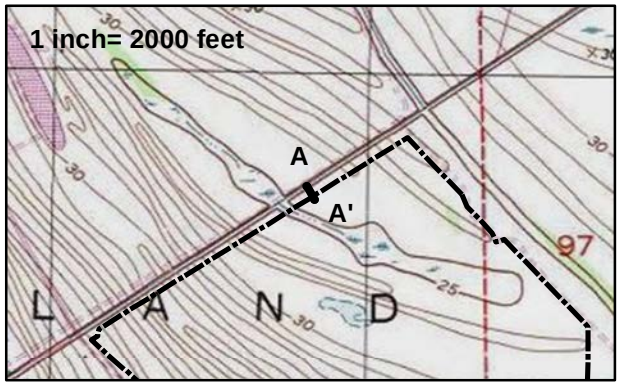
EXISTING CONDITIONS
CROSS SECTIONS O-P

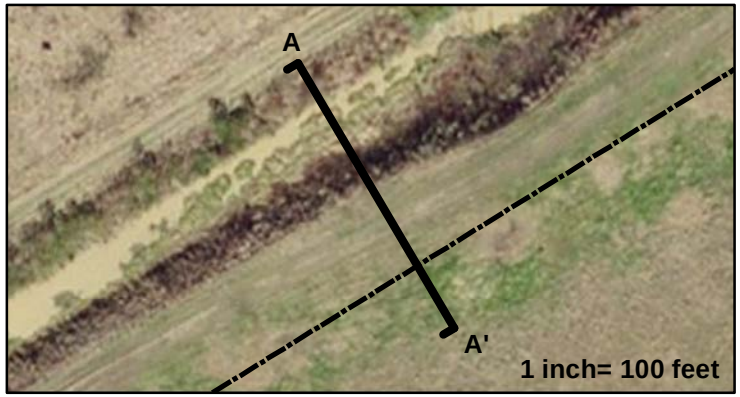
POINTE COUPEE PARISH, LA

Created:	TSC/AutoCAD
Approved:	DEB
Date:	11/14/12
Dwg. No.:	F28-29_XsectionExisting.dwg

DELTA LAND SERVICES

FIGURE 29





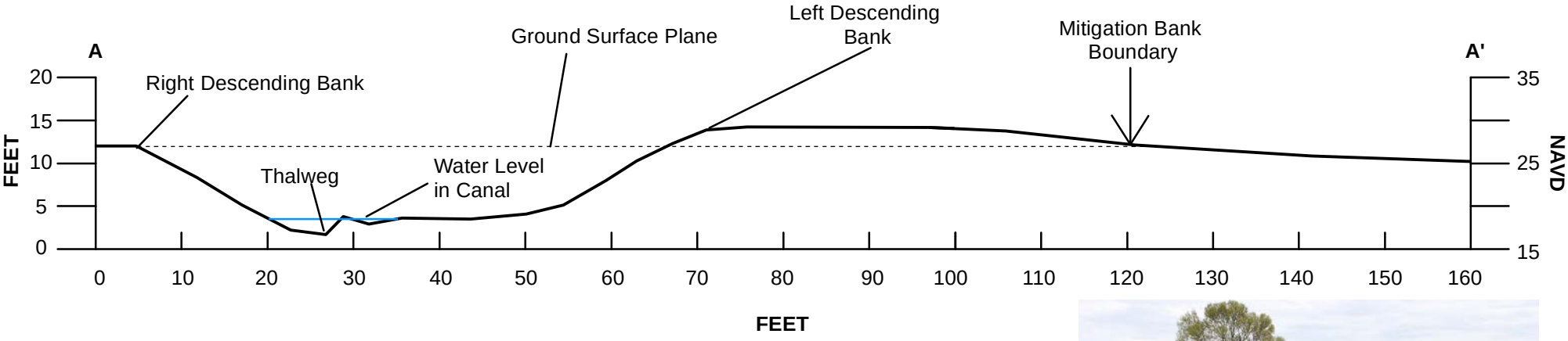


Photo taken 3/10/2012

Existing Cross-Section On March 23, 2012

Notes:

1. Depth from Ground Surface Plane to Ditch Thalweg= 10.2 feet
2. Depth from Ground Surface Plane to Water Level in Discharge Canal= 8.4 feet
3. Top Bank to Top Bank Width=66 feet
4. Ditch Bottom at Thalweg= 16.7 feet NAVD
5. Ground Surface Plane= 26.9 feet NAVD
6. Right Descending Bank Slope= 1.8:1 (54%)
7. Left Descending Bank Slope= 2.4:1 (42%)
8. Cross Sectional Area Below Ground Surface Plane= 395.7 square feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

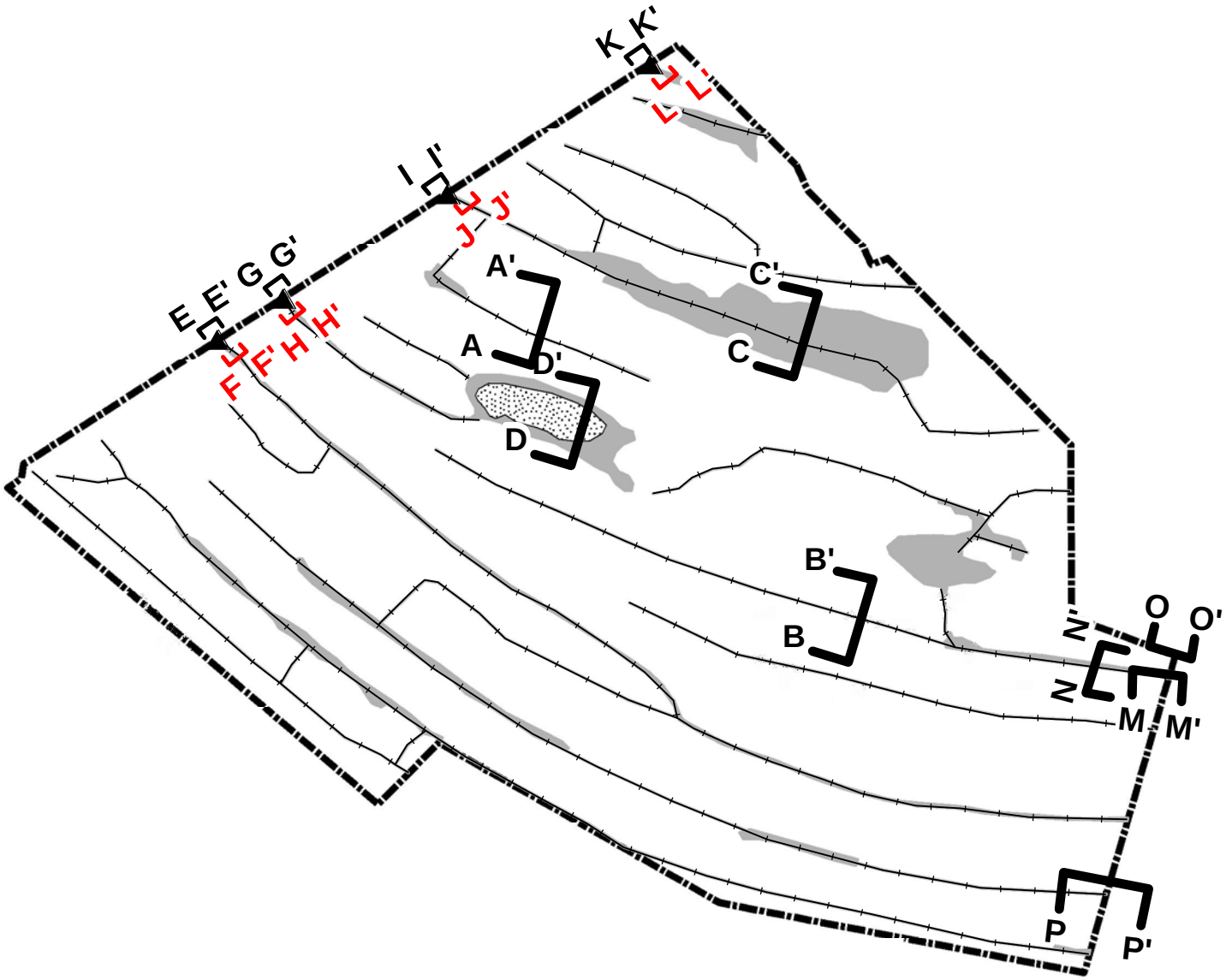
DIMENSIONS OF M-1 CANAL

Pointe Coupee Parish, LA

Created :	TSC/ArcView
Approved :	DEB
Date :	11/14/12
Map No. :	F30_M1Canal.mxd

DELTA LAND SERVICES

FIGURE 30



Legend

- Project Area (323.8 Acres)
- Existing Wetland Area
- Existing Other Waters
- Drains & Ditches to be Filled
- Temporary Drop Pipe Structures

N

800 400 0 800

Feet

Ponderosa Ranch of Pointe Coupee Mitigation Bank

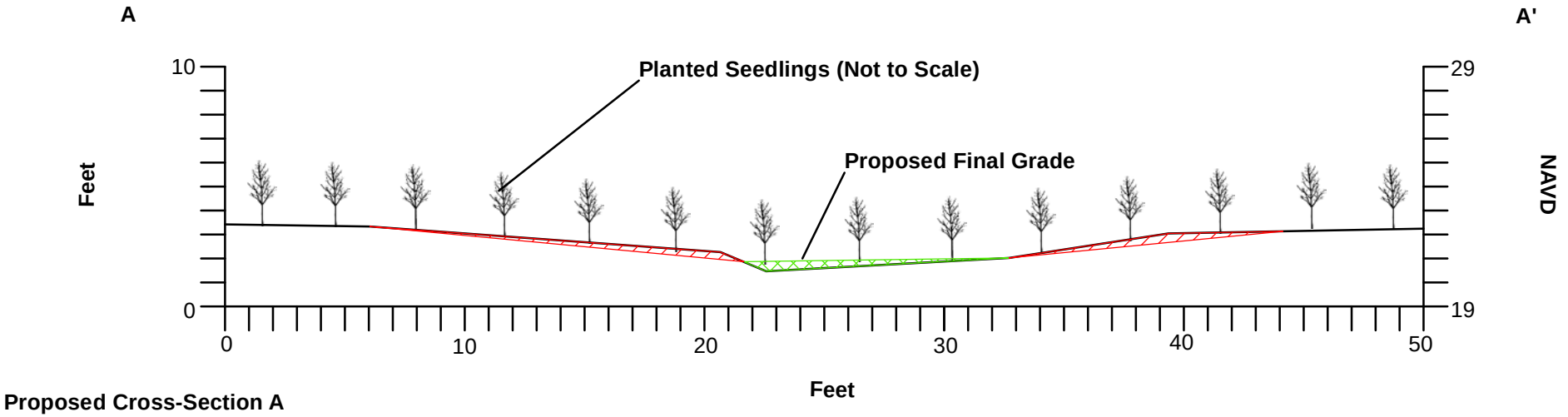
HYDROLOGICAL POST RESTORATION PLAN VIEW

Pointe Coupee Parish, LA

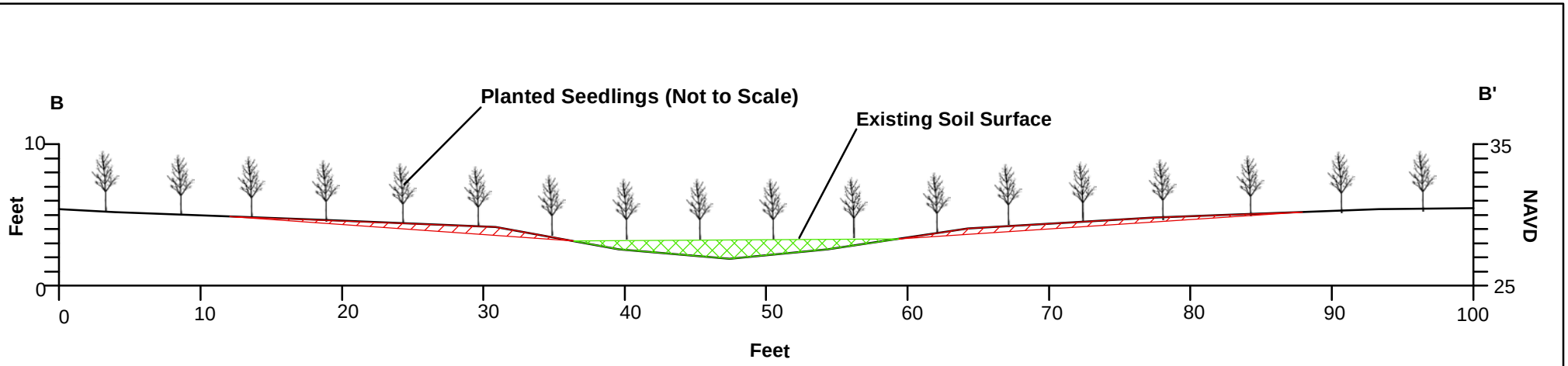
Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF31_RestorationPlanView.mxd	

DELTA LAND SERVICES

FIGURE 31



Proposed Cross-Section A



Proposed Cross-Section B

Legend

- Proposed Excavation
- Proposed Earthen Fill

Ponderosa Ranch of Pointe Coupee Mitigation Bank

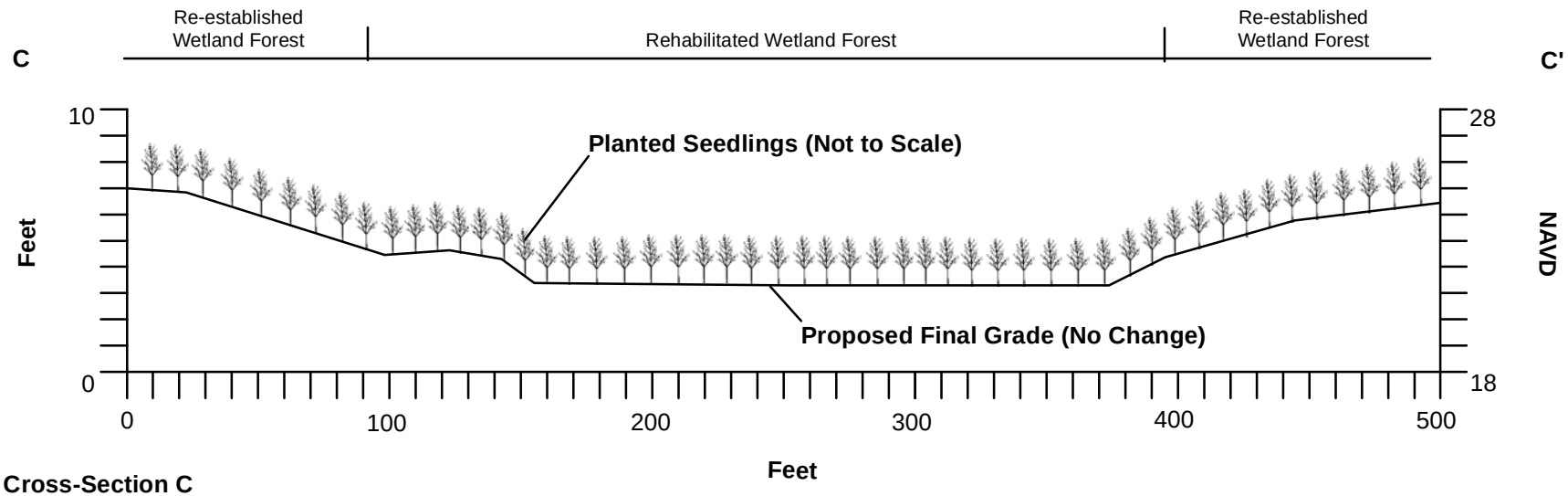
POST RESTORATION CROSS-SECTIONS A - B

Pointe Coupee Parish, LA

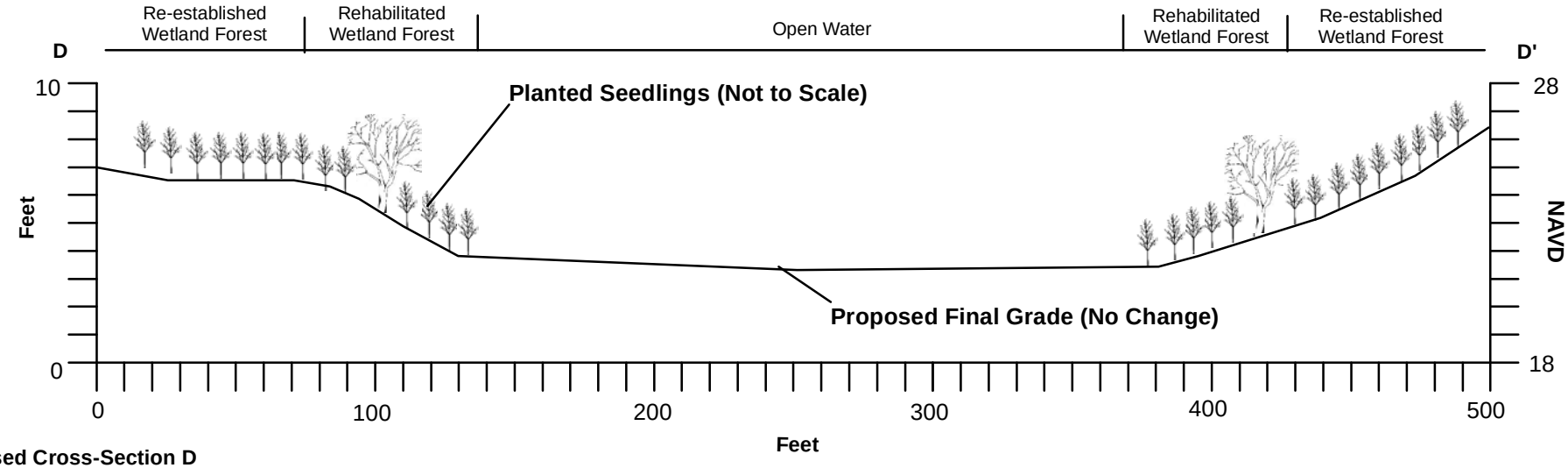
Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : CF32_XsecA-B.mxd	

DELTA LAND SERVICES

FIGURE 32



Proposed Cross-Section C



Proposed Cross-Section D

Ponderosa Ranch of Pointe Coupee Mitigation Bank

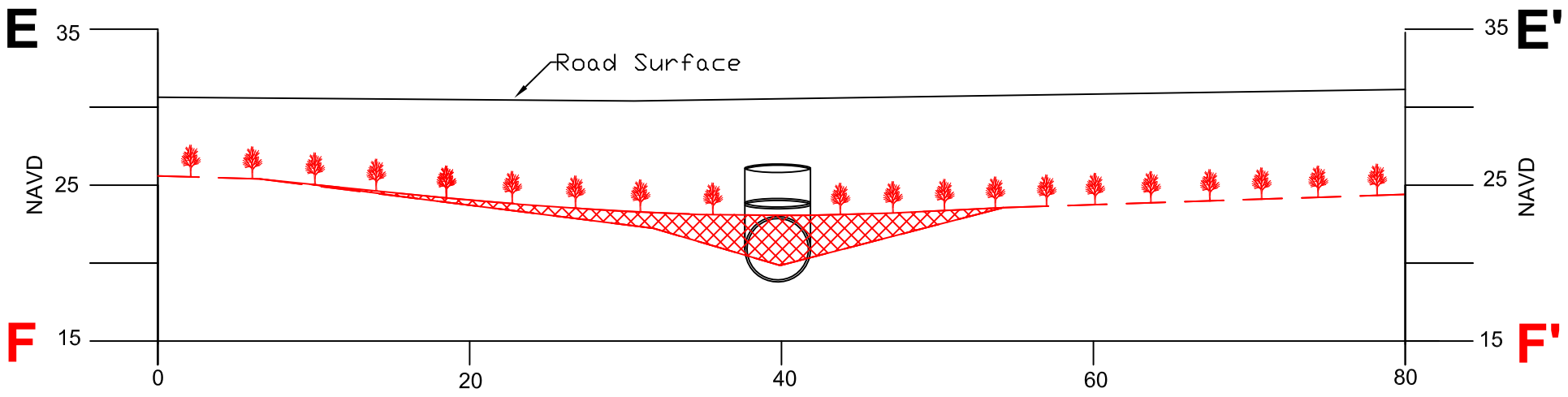
POST RESTORATION CROSS-SECTIONS C - D

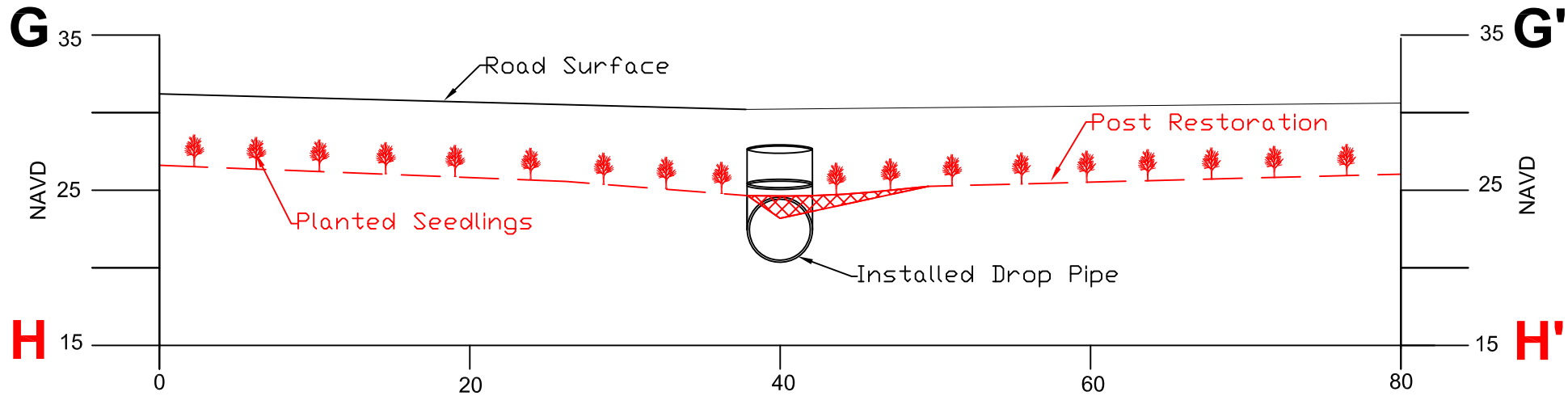
Pointe Coupee Parish, LA

Created : JMJ/ArcView	
Approved : DEB	
Date : 11/14/12	
Map No. : F33_XsecC-D.mxd	

DELTA LAND SERVICES

FIGURE 33



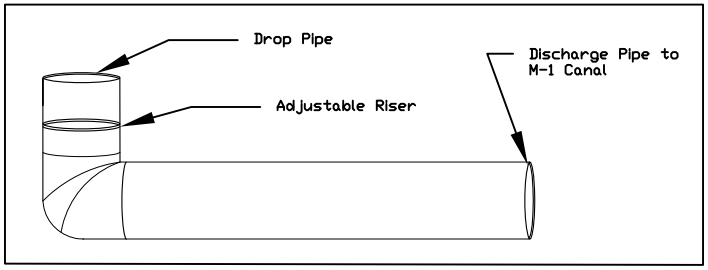


LEGEND

Proposed Excavation

Proposed Earthen Fill

ADJUSTABLE DROP PIPE



Ponderosa Ranch of Pointe Coupee Mitigation Bank

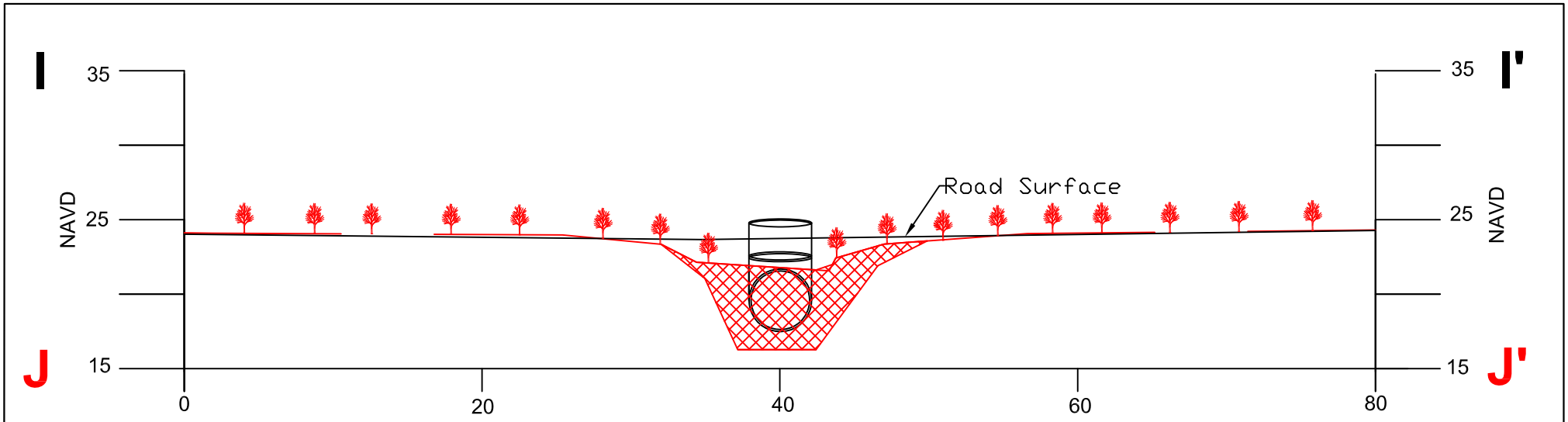
POST RESTORATION CROSS-SECTIONS E-H

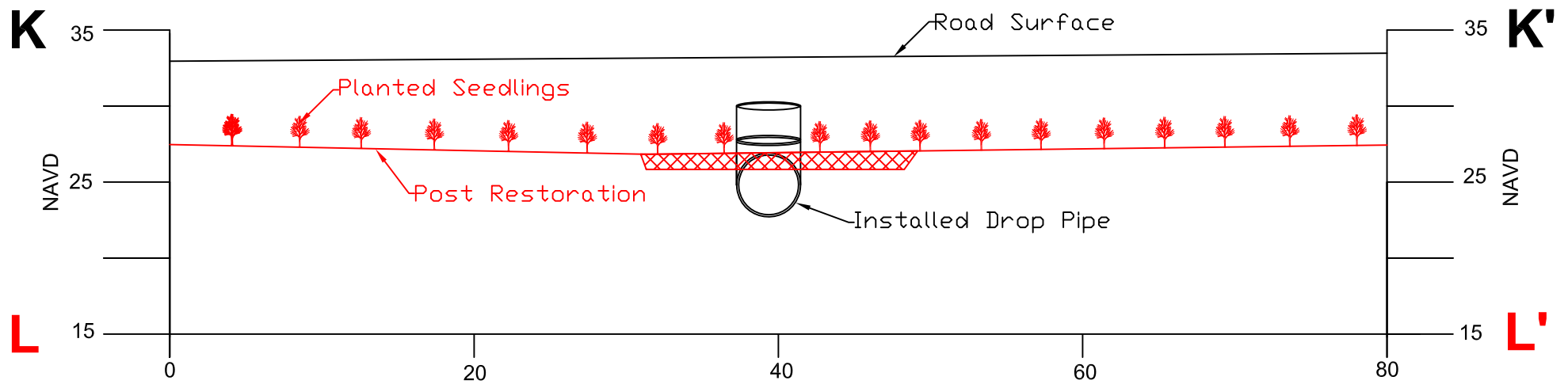
POINTE COUPEE PARISH, LA

Created:	TSC/AutoCAD
Approved:	DEB
Date:	11/14/12
Dwg. No.:	PonderosaXsectionProfilesE-L.dwg

DELTA LAND SERVICES

FIGURE 34



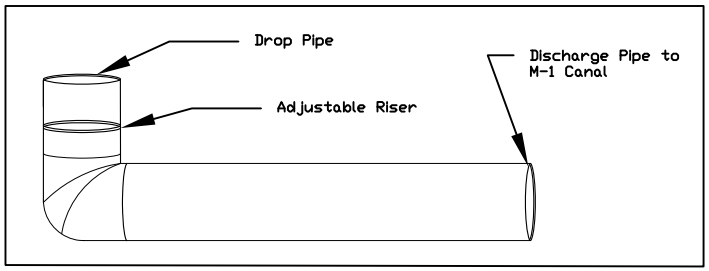


LEGEND

Proposed Excavation

Proposed Earthen Fill

ADJUSTABLE DROP PIPE



Ponderosa Ranch of Pointe Coupee Mitigation Bank

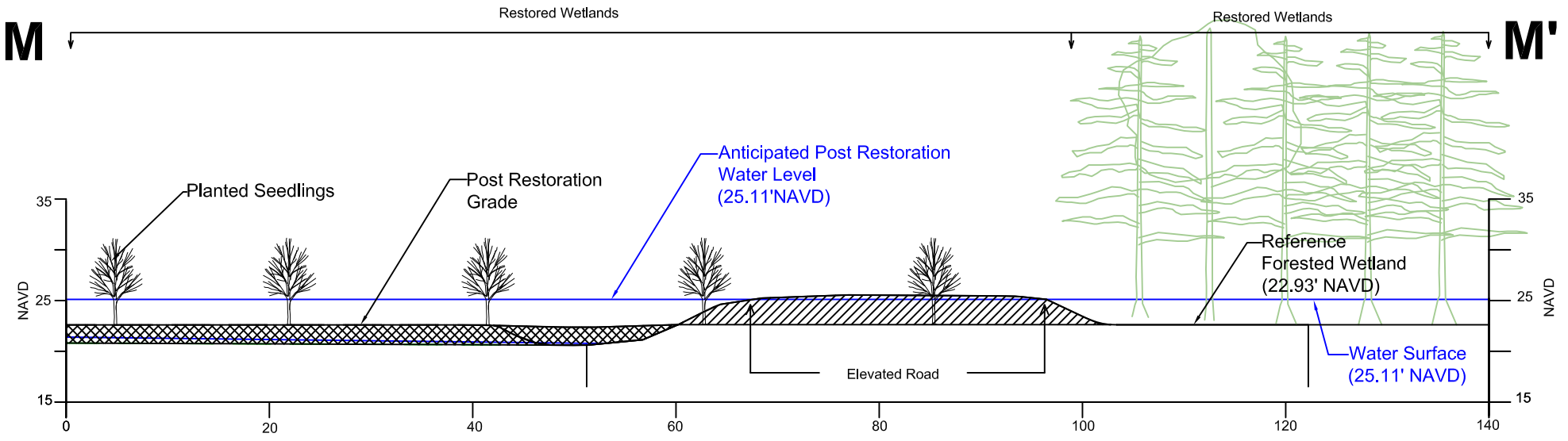
POST RESTORATION CROSS-SECTIONS I-L

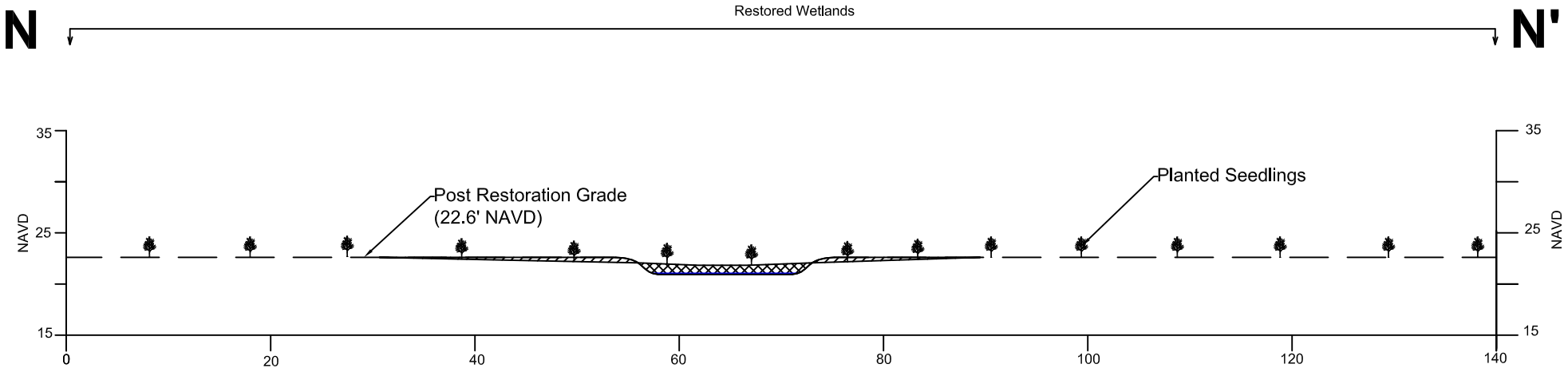
POINTE COUPEE PARISH, LA

Created:	TSC/AutoCAD
Approved:	DEB
Date:	11/14/12
Dwg. No.:	PonderosaXsectionProfiles.dwg

DELTA LAND SERVICES

FIGURE 35





Note: Surface water level in reference forested wetland is 2.21' feet higher than water in the ditch on the project site (pasture).

LEGEND

Proposed Excavation

Proposed Earthen Fill

Ponderosa Ranch of Pointe Coupee Mitigation Bank

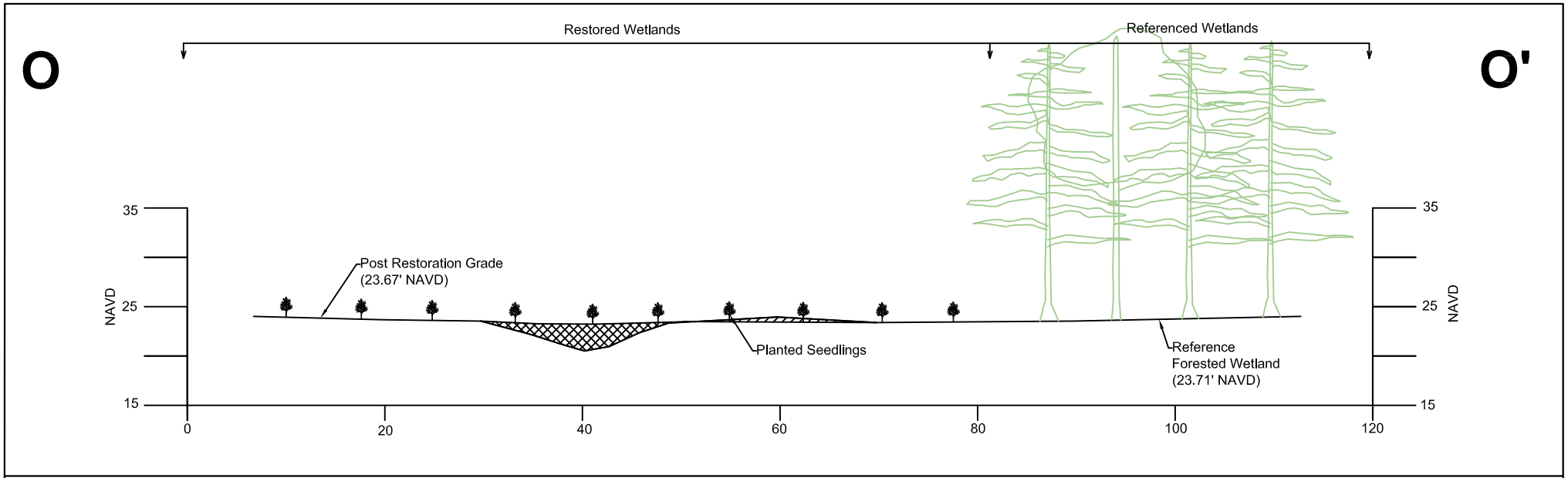
POST RESTORATION CROSS SECTIONS M-N

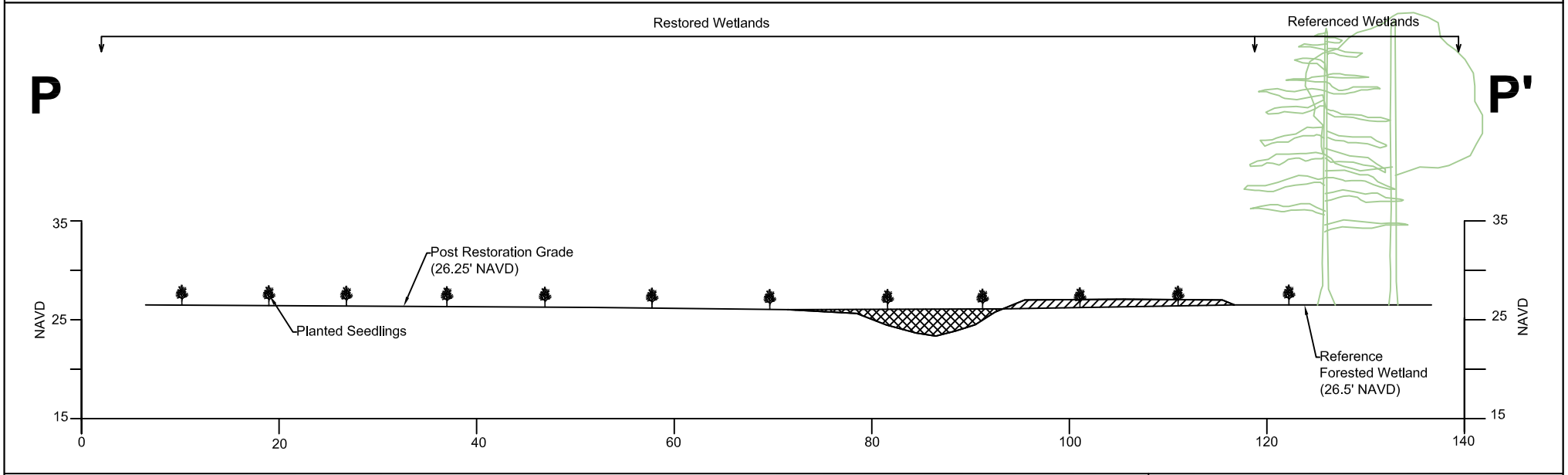
POINTE COUPEE PARISH, LA

Created:	TSC/AutoCAD
Approved:	DEB
Date:	11/14/12
Dwg. No.:	PonderosaXsectionProfilesM-P.dwg

DELTA LAND SERVICES

FIGURE 36





LEGEND

Proposed Excavation

Proposed Earthen Fill

Ponderosa Ranch of Pointe Coupee Mitigation Bank

POST RESTORATION
CROSS SECTIONS O-P

POINTE COUPEE PARISH, LA

Created:	TSC/AutoCAD
Approved:	DEB
Date:	7/26/2012
Dwg. No.:	PonderosaXsectionProfiles.dwg

DELTA LAND SERVICES

FIGURE 37

Attachment MWP-B

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF

JUL 26 2011

Operations Division
Surveillance and Enforcement Section

Mr. Jace M. Jarreau
Delta Land Services, LLC
1090 Cinclare Drive
Port Allen, Louisiana 70767

Dear Mr. Jarreau:

Reference is made to your request for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Sections 55 and 101, Township 5 South, Range 10 East, and Sections 7, 18, 97 and 98, Township 5 South, Range 11 East, Pointe Coupee Parish, Louisiana (enclosed map). Specifically, this property is identified as a proposed mitigation site on the Ponderosa Ranch, containing 2109.7 acres near False River in Ventress, Louisiana.

Based on review of recent maps, aerial photography, soils data, the information provided with your request, and a brief field inspection conducted on June 22, 2011, we have determined that part of the property is wetland and may be subject to Corps' jurisdiction. The approximate limits of the wetland are designated in red on the map. A Department of the Army (DA) permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into wetlands that are waters of the United States. Additionally, a DA permit will be required if you propose to deposit dredged or fill material into other waters subject to Corps' jurisdiction. Other waters that may be subject to Corps' jurisdiction are indicated in blue on the map.

This delineation/determination has been conducted to identify the limits of the Corps' Clean Water Act jurisdiction for the particular site identified in your request. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If the property owner or tenant is a USDA farm participant, or anticipates participation in USDA programs, a certified wetland determination should be requested from the local office of the Natural Resources Conservation Service prior to starting work.

You are advised that this preliminary jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date or the District Commander has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.

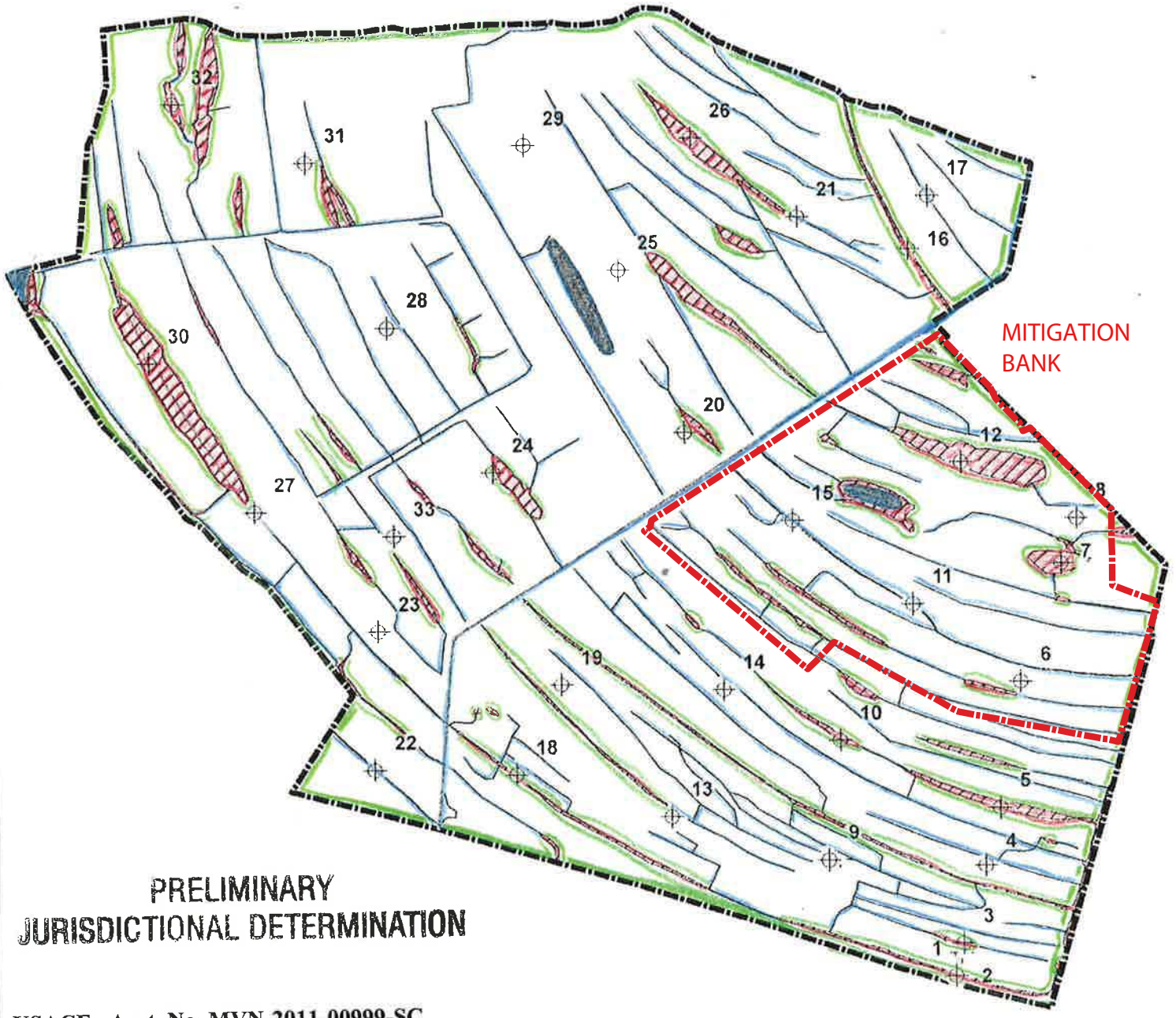
Should there be any questions concerning these matters, please contact Mr. Gary Couret at (337) 291-3042 and reference our Account No. MVN-2011-00999-SC. If you have specific

questions regarding the permit process or permit applications, please contact Dr. James Barlow of our Special Projects and Policy Team at (504) 862-2250. The New Orleans District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please complete and return the enclosed Customer Service Survey or complete the survey on our web site at http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Pete J. Serio
Chief, Regulatory Branch

Enclosures



USACE Acct. No. MVN-2011-00999-SC
For J. Jarreau, Delta Land Services, LLC. Lat. 30.648625, Long. -91.413637
Sections 55 & 101, T5S, R10E and Sections 7, 18, 97 & 98, T5S, R11E,
Pointe Coupee Parish, La., 6-22-11gmc FSV

Legend

- Project Area (2,109.7 Acres)
- Sec. 404 Wetlands (99.7 Acres)
- Other Waters of the U.S. (15.3 Acres) Sec. 404
- Data Points
- Nonwetland

1,600 800 0 1,600
Feet

Ponderosa Ranch

WETLAND DELINEATION MAP

Pointe Coupee Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	3/15/2011
Map No. :	DelineationMap.mxd

FIGURE 3

Attachment MWP-C

Revision_February_2012

Table 2B: Proposed Restoration/Enhancement Mitigation Worksheet

Mitigation Project Name: Ponderosa Ranch of Pointe Coupee Mitigation Bank

Mitigation Project Size (Acres) Include Wetlands, Non-wetlands and Buffer Areas: 304.0

Mitigation Project HUC: 08070300

Mitigation Project Basin: Terrebonne

Impacted HUC: (HUC)

Mitigation Project in the same basin as the impact: Yes

Proximity Factor: 1.0

	Factors	Area 1	Area 2	Area 3	Area 4	Area 5
Net Improvement	Mitigation Type	Re-establishment I	Rehabilitation I	Re-establishment I	Rehabilitation I	Enhancement I
	Maintenance/ Management Requirement	Short-term Structural Management	Structural Management	Structural Management	Structural Management	Structural Management
	Control	Conservation Servitude	Conservation Servitu	Conservation Servitu	Conservation Servitu	Conservation Servitu
	Temporal Lag	Over 20	Over 20	Over 20	Over 20	Over 20
	Credit Schedule	Schedule 1	Schedule 1	Schedule 1	Schedule 1	Schedule 1
	Kind	(Select an Option)	(Select an Option)	(Select an Option)	(Select an Option)	(Select an Option)
	Location	(Select an Option)	(Select an Option)	(Select an Option)	(Select an Option)	(Select an Option)
Negative Influences on the mitigation site	Commercial/Residential Development	No Impact	No Impact	No Impact	No Impact	No Impact
	Oil & gas activities	No Impact	No Impact	No Impact	No Impact	No Impact
	Size	Category 1	Category 1	Category 1	Category 1	Category 1
	Corridors	No Impact	No Impact	No Impact	No Impact	No Impact

Revision_February_2012

Table 2B: Proposed Restoration/Enhancement Mitigation Worksheet

Mitigation Project Name: Ponderosa Ranch of Pointe Coupee Mitigation Bank

	Factors	Area 1	Area 2	Area 3	Area 4	Area 5
Net Improvement	Mitigation Type * Maintenance/ Management Requirement	3.6	2.7	3.6	2.7	2.1
	Control	0.4	0.4	0.4	0.4	0.4
	Temporal Lag	-0.3	-0.3	-0.3	-0.3	-0.3
	Credit Schedule	0.4	0.4	0.4	0.4	0.4
	Kind	0.0	0.0	0.0	0.0	0.0
	Location	0.0	0.0	0.0	0.0	0.0
	Subtotal	4.1	3.2	4.1	3.2	2.6
Negative Influences on the mitigation site	Commercial/Residential Development	0.0	0.0	0.0	0.0	0.0
	Oil & gas activities	0.0	0.0	0.0	0.0	0.0
	Size	0.0	0.0	0.0	0.0	0.0
	Utility Corridors	0.0	0.0	0.0	0.0	0.0
	Sum of negative impacts	0.0	0.0	0.0	0.0	0.0
	Sum of m Factors	4.1	3.2	4.1	3.2	2.6
	Size of Area (Acres)	242.7	6.6	38.8	13.8	2.1
	M × A=	995.1	21.1	159.1	44.2	5.4
Acreage required for Permittee-responsible Mitigation project using required credits calculated in Adverse impact Worksheet.		0.0	0.0	0.0	0.0	0.0

Total Restoration/Enhancement Credits = ∑ (M × A) =	1224.8
Total Available including buffers	1224.8
Average Credit Per Acre =	4.0

	Buffers	Non-hydric inclusions	Hydric Inclusions
Credits per acre (M)	0.2	0.4	0.6
Size in Acres (A)		0.0	0.0
M × A =	0.0	0.0	0.0
Credits added to bank =			0.0

Attachment MWP-D

Costs for Ponderosa Ranch of Pointe Coupee
ver 1.1

Item	Units	Unit Values	Price Per Unit	Total Cost
Boundary Maintenance	Miles	3.00	$ 150.00	$ 450.00
Invasive Species Control	Acre	305.70	$ 90.00	$ 27,513.00
Invasive Species Control Mobilizatior	Fixed	Fixed	Fixed	$ 100.00
Cottonwood Control	Acre	200.90	$ 10.00	$ 2,009.00
Inspections (rate and per diem)	Day	1.00	$ 790.00	$ 790.00
Taxes on Project Acreage	Acre	323.80	$ 3.00	$ 971.40
Planted Acreage	Acre	304.00	NA	NA
Planting Rate	Trees/Acre	538.00	NA	NA
Seedling Cost	Seedling	163,552.00	$ 0.22	$ 35,981.44
Seedling Installation Rate	Seedling	163,552.00	$ 0.17	$ 27,803.84
Planting Cost	Seedling	163,552.00	$ 0.39	$ 63,785.28
Earth Moving	Cubic Yards	17,214.00	$ 2.00	$ 34,428.00
Site Prep and Preemergent Spray	Acres	304.00	$ 120.00	$ 36,480.00
Credit Acreage	Acres	304.00	NA	NA
Servitude Acreage	Acres	323.80	NA	NA

Construction Costs for
Ponderosa Ranch of Pointe Coupee
Year 0

Item	*Units*	*Unit Values*	*Price Per Unit*	*Cost*
Hydrology Restoration	Cubic Yards	17,214.0	$ 2.00	$ 34,428.00
Site Prep and Preemergent Spray	Acres	304.0	$ 120.00	$ 36,480.00
Planting (Seedlings and Installation)	Trees	163,552.0	$ 0.39	$ 63,785.28
Subtotal				***$ 134,693.28***
Construction Cost with 5% Contingency				**$141,427.94**
Cost Per Credit Acre				**$ 465.22**

Establishment Costs for
Ponderosa Ranch of Pointe Coupee
Year 1 to 15

Year	Event	Event Cost	Percent	Occurences Per Year	Cost	Percent of Cost	Release Milestone
1	Monitoring/ Inspection	$ 790.00	100%	2	$ 1,580.00		
1	Replant (30%)	$ 63,785.28	30%	1	$ 19,135.58		
1	Invasive Species Control (100%)	$ 27,513.00	100%	1	$ 27,513.00		
	Invasive Species Mobilization	$ 100.00	100%	1	$ 100.00		
1	Property Taxes	$ 971.40	100%	1	$ 971.40		
1	***Subtotal***	***$ 92,088.28***			***$ 49,299.98***	**50.7%**	***Initial Success***
2	Monitoring/ Inspection	$ 790.00	100%	2	$ 1,580.00		***$49,299.98***
2	Replant (10%)	$ 63,785.28	10%	1	$ 6,378.53		
2	Invasive Species Control (25%)	$ 27,513.00	25%	1	$ 6,878.25		
	Invasive Species Mobilization	$ 100.00	100%	1	$ 100.00		
2	Property Taxes	$ 971.40	100%	1	$ 971.40		
2	***Subtotal***	***$ 93,159.68***			***$ 15,908.18***	**16.4%**	
3	Monitoring/ Inspection	$ 790.00	100%	2	$ 1,580.00		
3	Invasive Species Control (20%)	$ 27,513.00	20%	1	$ 5,502.60		
	Invasive Species Mobilization	$ 100.00	100%	1	$ 100.00		
3	Property Taxes	$ 971.40	100%	1	$ 971.40		
3	***Subtotal***	***$ 29,374.40***			***$ 8,154.00***	**8.4%**	
4	Monitoring/ Inspection	$ 790.00	100%	2	$ 1,580.00		
4	Invasive Species Control (10%)	$ 27,513.00	10%	1	$ 2,751.30		
	Invasive Species Mobilization	$ 100.00	100%	1	$ 100.00		
4	Property Taxes	$ 971.40	100%	1	$ 971.40		
4	***Subtotal***	***$ 29,374.40***			***$ 5,402.70***	**5.6%**	
5	Monitoring/ Inspection	$ 790.00	100%	2	$ 1,580.00		
5	Invasive Species Control (5%)	$ 27,513.00	5%	1	$ 1,375.65		
	Invasive Species Mobilization	$ 100.00	100%	1	$ 100.00		
5	Property Taxes	$ 971.40	100%	1	$ 971.40		
5	***Subtotal***	***$ 29,374.40***			***$ 4,027.05***	**4.1%**	***Interim Success***
6	Property Taxes	$ 971.40	100%	1	$ 971.40		**$33,491.93**
6	***Subtotal***	***$ 971.40***			***$ 971.40***	**1.0%**	
7	Property Taxes	$ 971.40	100%	1	$ 971.40		
7	***Subtotal***	***$ 971.40***			***$ 971.40***	**1.0%**	
8	Property Taxes	$ 971.40	100%	1	$ 971.40		
8	***Subtotal***	***$ 971.40***			***$ 971.40***	**1.0%**	
9	Property Taxes	$ 971.40	100%	1	$ 971.40		
9	***Subtotal***	***$ 971.40***			***$ 971.40***	**1.0%**	
10	Monitoring/ Inspection	$ 790.00	100%	2	$ 1,580.00		
10	Invasive Species Control (2%)	$ 27,513.00	2%	1	$ 550.26		
10	Invasive Species Mobilization	$ 100.00	100%	1	$ 100.00		
10	Property Taxes	$ 971.40	100%	1	$ 971.40		
10	Boundary Maintenance	$ 450.00	100%	1	$ 450.00		
10	***Subtotal with Year 10 Adjusted Inflation (2.41%)***	***$ 29,824.40***	***102%***		***$ 3,651.66***	**3.8%**	
11	Property Taxes	$ 971.40	100%	1	$ 971.40		
11	***Subtotal with Year 11 Adjusted Inflation (2.41%)***	***$ 971.40***	***102%***		***$ 994.81***	**1.0%**	
12	Property Taxes	$ 971.40	100%	1	$ 971.40		
12	***Subtotal with Year 12 Adjusted Inflation (2.41%)***	***$ 971.40***	***102%***		***$ 994.81***	**1.0%**	
13	Property Taxes	$ 971.40	100%	1	$ 971.40		
13	***Subtotal with Year 13 Adjusted Inflation (2.41%)***	***$ 971.40***	***102%***		***$ 994.81***	**1.0%**	
14	Property Taxes	$ 971.40	100%	1	$ 971.40		
14	***Subtotal with Year 14 Adjusted Inflation (2.41%)***	***$ 971.40***	***102%***		***$ 994.81***	**1.0%**	
15	Monitoring/ Inspection	$ 790.00	100%	1	$ 790.00		
15	Invasive Species Control (2%)	$ 27,513.00	2%	1	$ 550.26		
15	Invasive Species Mobilization	$ 100.00	100%	1	$ 100.00		
15	Property Taxes	$ 971.40	100%	1	$ 971.40		
15	Boundary Maintenance	$ 450.00	100%	1	$ 450.00		
15	***Subtotal with Year 15 Adjusted Inflation (2.41%)***	***$ 29,824.40***	***102%***		***$ 2,930.63***	**3.0%**	***Long-Term Success***
							$14,447.13
	Total				**$ 97,239.04**	**100.0%**	**$97,239.04**
	Total Per Credit Acre				**$ 319.87**		

Long-Term Annualized Cost Summary
Ponderosa Ranch of Pointe Coupee

Item	Units	Unit Values	Price Per Unit	Unit Percent	Cost	Years	Annualized Cost
Boundary Maintenance (5-year event)	Miles	3.00	$ 150.00	100.0%	$ 450.00	5	$ 90.00
0.5% Invasive Species Control (annual event)	Acre	305.70	$ 90.00	0.5%	$ 137.57	1	$ 137.57
Invasive Species Control Mobilization (annual event)	Fixed	Fixed	Fixed	NA	$ 100.00	1	$ 100.00
Inspection (annual event)	Day	0.20	$ 790.00	100.0%	$ 158.00	1	$ 158.00
Taxes (annual event)	Acre	323.80	$ 3.00	100.0%	$ 971.40	1	$ 971.40
Average Annual Cost (Starting at Year 16)							**$ 1,456.97**

Long-Term Costs and Projected Account Activity for
Ponderosa Ranch of Pointe Coupee
Year 16 to 50

Year	Item	Total Cost	Inflationary Adjustment[1]	Beginning Balance[2]	Ending Balance[3]
15	Annual Cost	$ -	$ -	$ 48,600.00	$ 48,600.00
16	Annual Cost	$ 1,456.97	$ 1,492.08	$ 50,684.94	$ 49,192.86
17	Annual Cost	$ 1,456.97	$ 1,528.04	$ 51,303.24	$ 49,775.20
18	Annual Cost	$ 1,456.97	$ 1,564.86	$ 51,910.56	$ 50,345.69
19	Annual Cost	$ 1,456.97	$ 1,602.58	$ 52,505.52	$ 50,902.95
20	Annual Cost	$ 1,456.97	$ 1,641.20	$ 53,086.68	$ 51,445.49
21	Annual Cost	$ 1,456.97	$ 1,680.75	$ 53,652.50	$ 51,971.75
22	Annual Cost	$ 1,456.97	$ 1,721.26	$ 54,201.33	$ 52,480.08
23	Annual Cost	$ 1,456.97	$ 1,762.74	$ 54,731.47	$ 52,968.73
24	Annual Cost	$ 1,456.97	$ 1,805.22	$ 55,241.09	$ 53,435.87
25	Annual Cost	$ 1,456.97	$ 1,848.73	$ 55,728.27	$ 53,879.54
26	Annual Cost	$ 1,456.97	$ 1,893.28	$ 56,190.97	$ 54,297.69
27	Annual Cost	$ 1,456.97	$ 1,938.91	$ 56,627.06	$ 54,688.16
28	Annual Cost	$ 1,456.97	$ 1,985.64	$ 57,034.28	$ 55,048.64
29	Annual Cost	$ 1,456.97	$ 2,033.49	$ 57,410.23	$ 55,376.74
30	Annual Cost	$ 1,456.97	$ 2,082.50	$ 57,752.40	$ 55,669.90
31	Annual Cost	$ 1,456.97	$ 2,132.69	$ 58,058.14	$ 55,925.45
32	Annual Cost	$ 1,456.97	$ 2,184.08	$ 58,324.65	$ 56,140.57
33	Annual Cost	$ 1,456.97	$ 2,236.72	$ 58,549.00	$ 56,312.28
34	Annual Cost	$ 1,456.97	$ 2,290.63	$ 58,728.08	$ 56,437.45
35	Annual Cost	$ 1,456.97	$ 2,345.83	$ 58,858.62	$ 56,512.79
36	Annual Cost	$ 1,456.97	$ 2,402.36	$ 58,937.19	$ 56,534.82
37	Annual Cost	$ 1,456.97	$ 2,460.26	$ 58,960.17	$ 56,499.91
38	Annual Cost	$ 1,456.97	$ 2,519.55	$ 58,923.75	$ 56,404.20
39	Annual Cost	$ 1,456.97	$ 2,580.27	$ 58,823.94	$ 56,243.66
40	Annual Cost	$ 1,456.97	$ 2,642.46	$ 58,656.52	$ 56,014.06
41	Annual Cost	$ 1,456.97	$ 2,706.14	$ 58,417.06	$ 55,710.92
42	Annual Cost	$ 1,456.97	$ 2,771.36	$ 58,100.92	$ 55,329.56
43	Annual Cost	$ 1,456.97	$ 2,838.15	$ 57,703.20	$ 54,865.04
44	Annual Cost	$ 1,456.97	$ 2,906.55	$ 57,218.76	$ 54,312.21
45	Annual Cost	$ 1,456.97	$ 2,976.60	$ 56,642.20	$ 53,665.60
46	Annual Cost	$ 1,456.97	$ 3,048.33	$ 55,967.86	$ 52,919.52
47	Annual Cost	$ 1,456.97	$ 3,121.80	$ 55,189.77	$ 52,067.97
48	Annual Cost	$ 1,456.97	$ 3,197.03	$ 54,301.69	$ 51,104.65
49	Annual Cost	$ 1,456.97	$ 3,274.08	$ 53,297.04	$ 50,022.96
50	Annual Cost	$ 1,456.97	$ 3,352.99	$ 52,168.95	$ 48,815.96
	Total	**$ 50,993.78**	**$ 80,569.16**		
	Average	**$ 1,456.97**	**$ 2,301.98**		

1. Adjusted using an inflation rate of 2.41%
2. Adjusted using an interest rate of 4.29% applied to the previous years' ending balance.
3. The ending balance is the begining balance less the estimated, inflated cost.

Attachment D

US Army Corps of Engineers
Regulatory Branch
PO Box 60267
New Orleans, LA 70160
ATTN: *{CORPS PROJECT MANAGER}*

Gentlemen:

The Ponderosal Ranch of Pointe Coupee Mitigation Bank has made arrangements with *{PERMITTEE'S NAME}* to purchase *{NUMBER OF ACRES OR CREDITS} {ACRES OR CREDITS}* of *{HABITAT TYPE}* for unavoidable impacts associated with work authorized by the Department of the Army permit number *{MVN-XXXX-XXXXX-XX}*. The Ponderosa Ranch of Pointe Coupee Mitigation Bank assumes the responsibility for the permittee's compensatory mitigation requirements (i.e., to implement, assure performance, and provide long-term management of the compensatory mitigation project) in accordance with provisions of the Mitigation Banking Instrument governing this bank.

{CLOSING}

{NAME}
{TITLE}